KINETICS AND MECHANISM OF CATALYSED OXIDATION OF SOME ORGANIC COMPOUNDS

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the thesis entitled * Rinetics and mechanism of Catalysed oxidation of some oxidatic compounds has been carried out by Not Randowh Russer Delvedi under my supervision. We has fulfilled the sequiments for the degree of Loctor of Philosophy in Chamistry of Bundelkhand University, Thensi, requading the nature and prescribed period of investigational work. The work reported in this thesis embodies the work of the candidate himself.

Rice shukla
(Shorts supervisor)

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I feel immonse pleasure to express my Sincess graticule to my supervisor for Rej Mishor Shuble, Head, Chemistry Department, Atarra Spat Graduats College, Atarra, Sanda (U.P.) for his shie quidanon, head interest throughout the progress of the present investigation.

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Daparesant of Chambery Atarra 2.G. College Atarra, Danda (U.2.) Kanlanh Kuma Dulvodi

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***	*	interpretation of results and	367		181

Chara I

1.1A REPRESENTATION

Chemical kinetics is a part of science of motion. It is fundamentally concerned with the details of the process who make a system deta Converted fixes one state to enother with the time required for transition. As in the case most of the brenches of chemistry, reaction kinetics is an intimated blend of theory and experiment. However, "kinetics" of the reaction has been the main tool for arriving at conclusions. The subject of chemical kinetics is concerned with the detailed study of the rates of chemical rections. The precise measurement of the retain of chemical processes and their variation with various parameters forms the experimental part of the subject. The interpretation of the results leads to an understanding of the complex reaction - mechanisms The elucidation of the section mechanisms, which papereds elmost exclusively though such experisontal work, is usually surmicmented by other evidences, secause of this, chemical kinetics to considered as an important branch of chemistry and has acquired enormous literature 1-9 in the recent post.

has been studied in detail by several investigators. As a class of exidents, N - halogen compounds have received special strention 10-13 since these compands not as sources of halogenium cations, hypohelite species and nitrogen amions which art both as bases and nucleophiles, The exidative halogenetics by N - halo compounds such as N - brompedstanide (MBS)

offers a specific and septe sethed for frequenting high molecular weight populate and partoins and this selective charical method is the most useful method in populate structure determination. Hence the exidative decastory—lation of \mathcal{L} - eminoacide by N - halogeno compounds is an area of active experimentation. Therefore, in this chapter, the existing literature of the exidation of \mathcal{L} - eminoacide by various N - halogeno compounds is reviewed.

1.18 : REACTIONS MATHEMATICAL TRANSPORT CETATALE

the exidation of \angle - eminoacide by MBS was reported by scherberg et al. in 1951. At pr 4.7 and at temperature of most 30°C the exidation of most of \angle - emisoacide proceeds smoothly. Carton dicaide, amonic and aldehydes related to the \angle - eminoacide so treated and containing one casten atom less than the parent minoacide, are the parent usually produced from the eminoacide by the exidetion by WBS. At pr 4.7 and 30°C the decemberylation except for the fact that enzymic action is such to the production of the examples are specific to the production of the examples are such to the production of the examples as the state of the production of the examples as and all sidelyde.

A qualitative and quantitative Study 16 was made on the quant seven two derivatives by MBS. The only games evolved by treatment of aqueous columns of animosomics with MBS at addition, the aldebydes were casten dioxide and nicropen 17. In addition, the aldebydes

and mitriles corresponding to the decembrylated aminoacide were formed. The formation of aldehyde was accompanied by the liberation of an equal amount of amounts which was subsequently ouddied to missorem by NES. The kinetics of outdation of \angle - aminoacide by NES were investigated only in early eightles even trough the outdation macrisons themselves seme reported suite earlier.

the kinetics of exidation of - establish by NAS have been reported by Mushken 25 al. 18.19 and Shanjava 25 al. 10 in edetic ocid - water mixture. The buc groups of workers have reported different mechanisms and different cultation products though the kinetics observed by then are similar. Shanjave proposed the abstraction of hydrogen from the neutral asinomia by NAS in the rate determining stop to give aldebyde as the final product.

corresponding nitriles through the interaction of \mathcal{L} - rains and switch the follows:

alemine and value presented by NBs have been studied extensively 21 as a function of pH and also in acid medium 22. At pH 3.7 plycine obeys michaelis menten type of kinetic behaviour but shows substrate inhibition at pH 5.0. Both alemine and value display some order dependence on substrate contentration at pH 3.7, but exhibit Michaelis - Menten behaviour at pH 5.0. Solvent isotope effect and proton inventory technique were also studied. A mechanism involving the formation of acylhypobromite of plycine, which on slow decomposition gives an imine and subsequent repid conversion of laine to products is proposed. Both alanime and value undergo exidation by a mechanism involving the slow abstraction of the hydrogen as hydride ton fine the substrate as well as its acylhypohromium to give the imine.

$$(2.98) \times 2.000 \times 2.0$$

The kinetics of oxidation of \angle - eminostide by weight proceed in the first angle 3.5 to 6.0. The observed

results show that in alkaline medium the mechanism could be written as a

In buffered medium, the mechanism differs from the one in alkalian medium in the respect that the first step is the equilibrium between \angle - aminoacyl hypochlorite and aminoacid myltter ion as:

$$> n - ca + R - ch (mh) coc = R - ch (mh) coc $\Rightarrow mh$$$

the \mathcal{L} - minoscid and to maddenyde.

The earliest definite work on the paidation of amino acid with N-chloro p-toluene sulphonesalde was reported by Dakin 25 in 1916 - 1917. Dakin employed N-chloro p-toluene sulphonesalde (pescally known as chloresaine - T or CAT) as the oxidising agent for a variety of aminoacids and reported that one mole of CAT per mole of aminoacid will cause the formation of aldehydes, carbondoxide and amonis but two soles of this measure will cause the production of nitriles.

The kinetics of oxidation of a number of eminoacide by chloremine-T is both acidic and alkaline media has been studied extensively 26-50. Depending upon the pH of the medium CAT furnishes different types of reactive species in solution. S - chlore p-toluene sulpheneside (sonochlore-mine-E, R H HCl, were R = pCH₃ (C₁ H₄ SO₂). dichloremine-T incl₂). NOCL and possibly H₂O Cl are the predominant species in acid solution and RECL and OCL ions are formed to alkenine section. The exidation process of K - aminoacids in acid sads has been reported to proceed via, two paths. one involving the direct interaction of RHACL with the neutral eminoacid which subsquently interacts with eacther molecule of RHACL in a fact step to give H.

H - dichlore eminoacid which subsquently interacts with

yield the product nitrile and the other path involving the interaction of CL, or H,O GL*, produced from the disproportionation of NeHCl in the presence or absence of Cl* ion, with the substrate to give the product. In alkaline medium, the mechanism involving the interaction of R MHCl, HOCl, RNCl* and CCl* with the substrate is proposed. The reaction achieve can be summarised as shown below: Acid Medium:

S + BNICL PRODUCTS

 $Cl_2 + R$ CH (HH₂) COOH \longrightarrow R CH (HHC1) COOH (S')

s' + Cla Post Products

ST + Hall Ca * Process

Alkaline Medium :

SHHCL + R' CH MH2) COO - E-G.B. R' CH MHCL) COO (6')

5 * R MES Post

8, C1 (885) C00, + OG, - Togs N, CH (885) C00, (2,)

S" + OCL" PEDGUCTO

the electrophilic attack of dichlorosine-T (NACL) at the carrosyleto group of the aminoscid is elso proposed 1.46 from the kinetic results in addic medium. Kinetics of oridetion of \angle - eminoscids by N-brown p-talument sulphonomide (2007), N- chicap became sulphonomide (2007), N- chicap became sulphonomide (2007) (CAN) and N-brownberrane sulphonomide (2007) (CAN) were also extensively studied in both edidic and alkaline media. The kinetics and maction mechanisms of the oxidents are stadies to that of CAN.

ALESKAT MORK

It opposes from the survey of literature that Nebromosuccinimide is a potent oxident in edidic and alkaline media, but the literature on its oxidative capacity in the presence of homogeneous catalyst icidium (III) chiorida in ecidic or elkalina madia is not known. I riciom (III) chloride al though has been earlier ettempted to obtain its catelytic potential in in N-beconcetamide but in hydrochloric acid catalytic potential of inidica (III) duodide in madox system involving N-bancosuccinimide as oxidant and amino acids es reducing agents. Hence in the present work on attempt has been made to investigate the kinetics of inidium (KII) chloride catalysed oxidation of glycine, alonine and value by N-backgoodiniside in hydrochloric acid walno sweenic ecetate as bromide ion seavenger. The kinetic date will be collected in the presence of potassium chloride. Since Variation of lonic Stranger of the medium plays on important mio in deciding the nature of reactive species of nate determining step, hence in the beginning it was attempted to one whether rescrioss were influenced by change in ionic strength of the modium. It was observed that ionic strength did not influence the rate of the maction. Hence all reactions were studied without maintaining ionic stwooth of the modium constant.

1.3 REFERENCES

- 1. C.H. Boméond and C. P.H. Clayer Comprehensive Chamical Financial Cockes). Classics Publishing Company.
- 2. G. Forter. Progress in Reaction Rinetics (Merice).
 Porters Oxford (1964).
- 3. N.M. Jeremov, 'Jose publicae in Chemium Kinetica and Rescrivity', translated by M. Doudert, Princeton University Prose, Princeton (1959).
- 4. A.A. Smot and H. J. Peatron, 'Kinetics and Mechanism', "Alley, New York (1961).
- 5. S. Rendon, The countations of Chemical Firstics.

 McGraw Hill. New York (1986).
- 6. K.J. Laidler, Chanical Ricetics, McSkew Hill. New York (1965).
- 9. S.S. Scotte fr. and H.S. Schwert, Chemical Kinetics.
 Spentics Unit. Has Joseph (1972).
- B. P.C. Whome, P. Jeinton and T.M. Lugden, Photo Chamistry and Reporting Plantics, Carbillage University Press, Carbidge (1967).
- 9. F. Franks and S.G.Pescon, Mechanisms of Inonyanic Resctions, John Siley, New York (1967).

- 10. R. Piller, Chem. Rev., 63, 21 (1963).
- 11. M.M. Campbell and G. Johnson, Chem. Rev., 78, 65 (1978).
- 12. L. Hotner and E.M. Minkelmann, Enger, Chem., 71, 349 (1959).
- 13. T.D. Wauch, Booklet, Armpeloo Chemicals Inc., Boulder, Coloredo, (1951).
- 14. References cited in Ref. 10.
- 15. A. Aschorbory, R. Morbasher and M.Z. Baraket, J. Chem.
- 16. N. Kominsbort, G.M. Stevenson and J.H. Luck, J. Riol. Chem. 235, 1441 (1960).
- 17. G. Stavenson, Diss. Abs., 21, 2495 (1961).
- S.P.Muchken, J.P.Munel, A.R.Dood, and R. Giegh, Indian
 J. Chom., 166, 35 (1978).
- S. P. Muchern, K. Singh, L. Panday and J. Sharma, Bull. Indt. Cham. ACSS. Sin., 27, 69 (1980).
- 20. M. Essanyevo, S. Sathuran and P. Savanseth Aso, Inches J. Chom., 15A, 651 (1978).
- 21. O. Gepelektivitan and J.L. 1999, J. Cts. Cham. 50, 1206 (1985).
- 22. P.S. Rechekrishmanurchi, B.S.Suspel and D.P. Patnelk, Indian J. Chom. 25a, 69 (1986).

- 23. M.S.Romchendron, D.E.Swermmoorthy, V.Hoje Singh and T.S.Vivekemendson, Bull. Chom. Soc. (Jopan), 63, 2397 (1990).
- 24. M. . Remechandren, D. Comparence of thy and T. ... Vivolensadem. Oxdo. Occurs. 13, 23 (1990).
- 25. H.D. Dekte, Mochem., J., 10, 319 (1916); 11, 79 (1917).
- 26. A.K. Boso, R.M. Mehrotto and S.P. Mashama, Indian J. Chem., 11. 896 (1973).
- 27. A. Kusat, A.K. Sobe, and S.P. Mushkam, Mcnatsh. Cham., 106, 13 (1975).
- 29. A. MIRRET, A.M. JODG., ORS S. V. Mordiners, J. Indian Chem. 300., 53, 755 (1976).
- 29. San Robjen, Data, Mahadayappa and Hamas Makan. Bull. Soc., Chem. Franco, 301 (1979).
- 30. W.M.M. Coskie and D. Mahadavapaka, (Kabatah, Chem., 110.
- 31. J. Shacoo, L. Rendey and S. Aksalıcan, Indian J. Chem., 19A. 475 (1980).
- 32. D. Jatchedeveppe, M. J. Janes, and D. M.M. Gowede, Indian J. Chem., 194, 325 (1980).
- 33. D.S. Mohadevapon, M.S. Mangepos and M.M.M. Gowde, Recot. Kinot. Catol. Lett., 15, 13 (1980).
- 34. H.M. K. Maidu, S.M. Fatgeri deri S.S. Mehadovenpa, J. Indien, Chem. Soc., 57, 1185 (1980).

- 35. D.S. Mahadavappa, K. Kangappa, N.M.M. Opuda, and B.T. Opuda, Int. J. Chom. Kipat., 14, 1183 (1982).
- 36. B.C. Coude and D. Mchodeverso, J G S Postin Trens. 3. 323 (1983).
- 37. D. Andhedeveppa, K. G. Karsappya, N. M. M. Couda and B. T. Coude.
 Indian J. Chem. 22A, 621 (1983).
- 38. U. Verne and B.S. Yedav, J. Indian. Chem. Soc., 61, 58 (1984).
- 39. B.J. Dude, B. . Sherigaro, Dis. Mohadavorya and K.S. Rengappa, Indian J.Chem., 244, 932 (1985).
- 40. V.C. Cupte and K.K. Mupte, J. Chem. Got. (Pek), 7.
- 41. M.S.Remchandren, T.S.Vivekanandan end K.Hithyenendem. 303 Peckin Trans. 2, 1507 (1985).
- 42. F.J. Okote and K.K. Okote, Int. J. Chem. Einst, 17, 769, (1985).
- 63. B.F. Sowde and B.S. Shorkgara, Indian J. Sham., 25A, 960 (1986).
- 66. B.T. Gowdo and E.V.Hao, Indian J. Chem., 25A, 908 (1986).
- 45. 2.1. Cosde end 8.0. Sherigara, Oxid. Commun., 9, 165

- 46. M.S.Resechandran and T.S.Vivokomandam, Pull. Chem.
- 47. B.T. Opuda and R.V.Rap. Cadd. Commun. 10, 31, (1987).
- 88. S.T. Obyde and B.S. Shortgers, J. Indian Chem. Soc.,
 66. 158 (1987).
- 49. H.T. Joude and R.V.Ren, J. Indian Chem. Soc., 64, 467
- 50. 9.T. dowds and R.F. Reo, Endian J. Chem., 27 A, 39
- D.S. Mahadevappe, S. Anondo, M.S.M. Chado and
 E.S. Rengeppe, J. Indian. Chem. Soc. 61, 323 (1984).
- 52. 0.1. Coude and N.V. Reo, Indian J. Chem. 24 A. 1021 (1985).
- 53. 8.f. Cowde and R.V. Roo. Indian J. Chon. 25A, 578 (1986).
- 54. D. . Mahabovappe, K. . . Artsaurny and G. anerda, Indian G. Chem., 26A, 33 (1987).
- 55. 3.7. Obda and R.F.Ro, J. Indian Chan. Sec., 66, 403 (1937).
- 56. N.T. Cowde and S.V. Wee, Indian J. Cham., 27A, 34 (1984).
- 57. D. McDadevoore, M. Arond, M.M.M. Cowle, and B.F. Cowle, Int. J. Chan. Rinet., 15, 775 (1983).

- 59. D.S.Mehedoverse, S.Amend, N.A.A. Murthy and R. Mongarpe, React. Rinet. Catl. Lett., 23, 181 (1983).
- 59. D. Matadoveppa, G. Anend, A.S.A. Amethy and K. Rengappa, Indian J. Chem. 23A.

CHAPTER III

MATERIALD AND METICAL OF INVESTIGATION

2.1 CHEMICALS USED AND BUIRARATION OF THEIR SOLUTIONS

- (4) The solutions of glycine, alanime and valine toba chemie) were prepared by dissolving their desired and weighed samples in doubly distilled water. Animo acids used hore were samples of highest purity evaluable and hence they were used as such.
- prepared by dissolving its weighed excrystallised sample in doubly distilled water. Its solution was standardised by estimating its efficient boomine by independent estimations.
- (c) The solution of itidies (III) chloride (Johnson and Matthey) was prepared from its 1 as sample by dissolving it in 200 at of 0.1% HCL and then it was diluted to one little for stock solution. Its strength was calculated and strength of HCl was also calculated in the stock solution.
- th) solution of memoric acotece (the mix) was propored by dissolving its weighed sample in tripled distilled water containing 5% acotic sold.
- type chloric acid solution prepared was Standardised with standardised solution of sodium hydroxide which itself was standardised by Standard Solution of exalic acid (SDM).

- solution of sodium thiosulphate falso known as hypo)
 was prepared by dissolving the weighed assunt of its
 sample (t.Morck) in doubly distilled water. The
 prepared solution was further standardised with standard
 solution of copper sulphate indepetrically.
- the solution of potessium chloside (SM) was propered by directly weighed sample in distilled water.
- (i) Solution of succinimide was propared by dissolving its weighed sample (6. Merck) in doubly distilled water.
- t) Solution of sodium perchiorate was prepared by dissolving to 8. Merck (Serseny) Sample in desired quantity in known volume of distilled ester.
- (1) 10% solution of potossium indice was frushly proposed each day.
- th) is about solution we proposed.

2.2 . MEDIO OF INVESTIGATION

The kinetic investigations were carried out by following the procedure given here. Regulaite volume of Standard solution of reducing emino acids used here, hydeschloric acid, mercuric acetate, iridium (III) chioride, potassium chloride and other respents. if any. were taken in a reaction wasel which was kept in an electrically operated transstatic water bath set at desired temperature. The required volume of N-brame-Specinimide standard solution was also taken in another vessel which was also placed in the same the mostat for themel equilibrium. When solutions of both the wasads had attained the desired temperature, the polutions of to the the vessels were admed vigorously and the stop wotch was attented at the time of edition. An eligant of maction minture was taken out and than was noted as were time and this portion of maction alwane was authored for 1988 indepotrically. The particular of the reaction was monitored by determining the remaining Hill at different times of intervels.

The velocity constant of the spaceton wer calculated with the help of sessings noted at different time of intervals. A plot of (e - x) equiper "time" was plotted for different concentrations of MBS (whose 'e-x' is the

concentrations of PDS at different times). When the reaction has proceeded hereing 10% a tangent at point on the curve is drawn. The point corresponds to 10 minutes.

The slope of the tangent gave the value of (). The concentration at which () is determined has been designated as [NBS]. The oader of the reaction with respect to NBS is calculated with the help of () values obtained at different concentrations of NBS. Now when the order of the reaction with respect to NBS is determined and ascertained, the velocity constant of the determined and ascertained, the velocity constant of the determined of other reaction with respect to which order of the reaction is to be determined. This way the order of the reaction with respect to each reaction is to be determined. This way the order of the reaction with respect to each reaction is to be described in ascertained.

2.3 · SCALAR STATE OF THE PROPERTY OF THE PROP

various sets of experiments were carried out with different [ms]. [emino soid] ratios. Estimation of remaining sets showed that one sole of sets was consumed to coldine one sole of each of seino acids used here and scookdingly following stoichiomatche one (1) is formulated where a standa for the case and scookdingly following stoichiomatche one (1) is formulated where a standa for the case and case where a standa for

..... (3)

The corresponding aldebydes sem identified as end products in oxidation of each mains scide.

REPARTMEL

- 1. Singh, B. Sarema, B.S.L. and Sement, A.K., Totrohedion, 40, 321 (1984).
- 2. Reschandron, M.S., Essuaramoorthy and Vivokananden, T.S., Oxidation Communication, 13, 23 (1990).

CHAPTER TIL

 PERSONAL PROPERTY OF THE RECEIPTION OF THE RECEI

This chapter includes the study of kinetics of enddation of iridian (III) chloride catalysed exidation of some amino acids such as alycine, slanine and valine by N - bromosoccinimide in the presence of hydrochloric ecid. Prolicionry imprigations indicated that with the progress of the reaction a pale yellow calour developed in the reaction mixture after 10 - 15% of the reaction has proceeded. as a result of this development it was also observed that reaction which was proceeding slowing, become feater. This was appropriate appearance of Fr. in the reaction as a result of interaction between N-beneductainide and & (produced in the reaction). This produced brighter sets perallel oxidetion process and thus complicates the study of the title reaction. Proliningry Studies also showed negligible effect of vertation of ionic strongth of the medium on the mencaion roto. Hence all reactions have been corried out without Require Lands Stronger of the medium CONSTRUCT.

in order to polve the problem of throught orderion of chiral out in the presence of measure questo which detect as a source, so the presence of measure. It was observed that oppositions

of yellow colour was stopped. Hence all experiments were carried out in the presence of memoric acetats whose presence in the reaction pure N-bromosuccinimide exidation of amino acids without any complications.

In order to determine the order of the meetion with respect to N-brandsociniaide (NBS), several experiments containing different concentrations of NBS and et fixed concentrations of all other reactents under isolation conditions have been carried out. In each experiments conceneration of MBS was always lower than that of amino acid at least five times. The coults of various experiments have been recorded in tables 3.1 - 3.8, 3.9 - 3.16 and 3.17 - 3.26 in ordination of discine, alenine and velice respectively. The value of sem - order new consumt i.e. (at) to each table has been detectained from the slope of the curve dram between remaining 1986 and tion. The slope is determined et fixed time when bandy 10 - 15% reaction has purceeded. the value of [NBS] at which (-ds/de) has been determined is designated as [NBS] in ouch cable. I riding (III) chloride has been written as Ir(III) in each table.

[RHS] = 4.00×10 %, [GLYCLDS] = 2.00×10 %

[RCI] = 4.00×10 %, [TRG
$$(XXX)$$
] = 4.90×10 %

[RCI] = 1.00×10 %, [RG (XXX)] = 3.34×10 %

Temperature 30°C

W 1. 3	(& V Ramone)	nl of hypo 01/1800)	Time forton-1
Vinenzig-e-Balani, et regidi ejedi ballikeli. Vinenzia dibilinga vinenzia navezia eserentea	医乳球球球 的复数水水水 医水水水水 医水水水 医水水水 医皮肤 医皮肤 医皮肤 医皮肤 经收益 化二甲基甲基	经生产证据 建氯酚铁矿 化二氯酚铁矿 医克尔氏病 经收益 计可能处理 化二氯甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基	· · · · · · · · · · · · · · · · · · ·
		7.20	00
		5.76	05
		4.72	10
		4.06	25
1.21	3.15	3.66	20
		3.32	28
		2.76	30
		2.70	
		2.32	40

[HES] = 9.00×10^{-9} , [Mycine] = 2.00×10^{-9} , [Mycine] = 4.00×10^{-9} , [Mycine] = 4.00×10^{-9} , [My (Mcl₂] = 3.34×10^{-9})

Temperature 2003

	al of hypo	[HBS] x so M	(-00/at) × 10
party supragraphic School see Attention Problems	gar Serve Lingur Asily annohand angengangan ing bendit tanana Nasara-Sidat tetaphak		
00	9.00		
05	8.22		
10	7.66		
20	6.30		
30	5.40	4.60	1.39
50	3.50		
60	3.03		
70	276		

[mas]	4	6.67:10-4,	[Glycine]	***	2.00×10-2

[HC1] = 4.00×10⁻²M. [IR(XX)] = 4.80×10⁻⁴M

 $[KC1] = 1.00 \times 10^{-2} \text{M}. [Mg (0Ac)_2] = 3.34 \times 10^{-3} \text{M}$

Tomporeture 30°C

	ml of hypo	[NBS] # 104	(電影) × 10 ⁷
	#4/1900)	alama sagagangi Albanyangangan palaga da 19.56% s sesahan na Babaha da 1974. sagai sagai sagai	
00	12.02		
05	10.70		
30	8.98		
20	8.30		
30	7.04	6.20	1.61
40	5.98		
50	5,12		
60	4.40		
70	3.06		

TARLE 3.4

Temporature 30°C

	ml of hypo	coverage flower describes to large resources relative to the contract of the c	(de) × 10
	(1/392)	and the construction of th	
00	7.06		
05	6.50		
10	6.14		
20	5.42		
30	4.74		
40	4.10	7.45	5.08
60	3.43		
60	3.12		
100	2.94		

3.5

Transportation 30°C

nime	ml of hypo (M/882)	[NBS] * x 10 %	(音) × 20 ⁷
er eftermineliere i fan ste rûn steam stêde steamfromheldsteam steamfrom s	भक्ताच्या १८८८ अन्त्र । त्रांक्षाकाल्ये । तेताका भक्ता मृत्याच्या १८५४ व्यावस्थितकार्यस्य विकालकार्यस्य स्थापन	क महत्त्वमा कर्तकार्थकार्थकार्थकार स्वतः हो निकालकार्थकार्थकार्थकार अस्ति । सन्दर्भन स्वतः स्वतः स्वतः स्वतः स स्वतः	eriode de la sector - de la sela alla entreba en esta filmatica de la companiona del companiona della compan
00	21.72		
05	20.82		
10	10.04		
20	9.76		
40	7.02	12.30	3.34
60	6.18		
90	5.40		
130	4.74		
170	4.62		

7.031.23 3.6

[NBS] =
$$16.67 \times 10^{-4}$$
, [NBycine] = 2.00×10^{-2} M

[NCI] = 4.00×10^{-2} M. [In (NIX)] = 4.80×10^{-4} M

[NCI] = 1.00×10^{-2} M. [NG (OAC)] = 3.34×10^{-4} M

77,000	al of hygo	[NUS] = 10 M	(")x107
	14/490)	and the state of t	N L-3 s-3
00	9.12		
05	7.02		
10	5.98		
50	6.94		
30	4.44	15.20	4.00
50	2.98		
70	2.36		
90	2.16		
130	1.98		

373 3A

	all of hypo	[NBS] * x 30 M	(THE) 1210 7
(440.)	64/490)	ia sidas rana da serentada anti ilas a ser si haridan higa esperida hidar. A historia da sida sida sida sida s	
00	9.76		
05	8.62		
10	7.94		
20	6.84		
30	5.86	18.40	4.62
40	5.04		
60	3.96		
	3.30		
100	2.52		

Time	ml of hypo (N/490)	HES X 10 M	(元) = 107
00	12.20		
05	30.76		
20	9.78		
30	8.42		
30	7.20	22.90	5.02
40	6.04		
50	5.49		
60	4.80		
90	4.20		

74818 3.9

[NBS] =
$$4.00 \times 10^{-9}$$
M, [Alemane] = 2.00×10^{-9} M
[NC1] = 10.00×10^{-9} M, [Eq.(121)] = 4.80×10^{-9} M
[NC1] = 1.00×10^{-2} M, [Hg(0AC)₂] = 3.34×10^{-9} M

2,130		hypo	[ms]*	()30	
find or	471	2021			M	1-1	5

	40 (20 2 2 2 3			
	(also)	61/1803)		M 1. 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
With	and the state of t	ं प्रदेशकांका तकत्व वेहाता न तकते । प्रदेशके केवल विकास केवल के न न न तकिया की नहीं उसके उसके तक्ष्मिक के उसके	agun night mu dein seile die und der der Stade Sta Stade Stade St	esseppe var in het mitte det kommen var det en kommen de til kommen som en det kommen ette som en som en som e Til som en s
	00	7.20		
	05	6,66		
	30	6.40		
	30	5.82	3.75	0.70
	30	5.20		
	40	4.78		
	60	3.68		
		3.02		
	100	2.56		

[NBS] =
$$5.00 \times 10^{-2} \text{M}$$
, [Alanine] = $2.00 \times 10^{-2} \text{M}$
[NCI] = $10.00 \times 10^{-2} \text{M}$, [Ig (III)] = $4.00 \times 10^{-4} \text{M}$
[NCI] = $1.00 \times 10^{-2} \text{M}$, [NC (III)] = $3.34 \times 10^{-4} \text{M}$

Transperature 30°C

1	e/1802)		(一器)×10"
	9.00		
	8.54		
	8.14		
	7.52		
	7.02	4.75	0.84
	5.32		
	4.32		
	3.50		
	3.12		

PARLE S.M.

[mas]		6.67×10 ⁻⁴ ×,	[Namine]	-	2.00×10 ⁻² M
	***	10.00×10 ⁻² M.	[z*(trr)]	4	4.80::10 ⁻⁶ 4
	100	1.00x10 ⁻² n,	[19 (0-4)2]	AND THE	3.34×10 ⁻³ N
		Tomper	ature 30°C		

24,000	mi of hypo	[NSS] R 10 M	(A)xto
(33.5.)	M/1902)	ing sagantisans, aport of the distribution is the risk of the distribution of the dist	
00	11.99		
05	21.54		
10	10.74		
20	10.18		
30	6.24		
	6.92	6.30	
70	5.58		
90	4.72		
130	3.92		

[NBS] = 8.00×10⁻²M. [XSD120] = 2.00×10⁻²M [NCI] = 10.00×10⁻²M. [X_SCIXI)] = 4.80×10⁻²M [NCI] = 1.00×10⁻²M. [NC(0/C)₂] = 3.34×10⁻²M

Temperature We:

11.00	at of bypo	C 20 1865] 35 20 M	(de) x107
(nana)	\$1/E90)	· "我们 () () () () () () () () () (
00	7.06		
05	6.48		
30	6.32		•
20	5.00		
40	4.64	7.60	1.36
60	6.28		
90	3.68		
120			
160	2.50		

7100	als of hypo	[mas] x 10 m	(de) x107
(main)	61/690) - and a superior production of the superior of	t that the states the states on the states of the states o	H 1 5
00	11.72		
05	10.98		
10	10.50		
20	9.64		
40	9.60		
70	6.82	12.60	2.00
130	5.74		
150	5.08		
200	4.96		

Temperatura 300;

	18 OF MED	[NBS] #10 M	(流) 2207
(min.)	(1/430)	agentalent in flow later in the site of the control	A LA COMPANIE CONTRACTOR CONTRACT
00	7.12		
05	6.26		
10	6.72		
20	6.22		
	5.52		
70	4.76	36.00	2.16
90	4.20		
120	3.94		
130			

100	20.00×10-4,	[Alanine]	10	2.00×10-2M
200	10.00x10 ⁻² M,	[irail]	100	4.80x10 4
	1.00×10 ⁻² M,	[iig (0/c) ₂]		3.34×10 ⁻³ N
		Also.		

	ml of hypo	THE TARREST STATE OF THE PROPERTY OF THE PROPE	(H) x10'
(mln.)	(430)		N L-3 a-1
industrial constructions of the second construction of the constru	· · · · · · · · · · · · · · · · · · ·	编表: "神秘 " "我们的现在分词,我们们也不是一个人,这一个人,这一个人,我们们就是这一个一个人,也是一个人,他们们就是一个人,他们们们们们们们们们们们们们们们	·····································
00	8,56		
05	8.14		
20	7.84		
20	7.38		
40	6,54	19,00	2.60
70	5.24		
100	4,62		
3.40	4.34		
200	3.40		

SASS 3-36

 $[NBS] = 25.00 \times 10^{-9} M$, $[Alanino] = 2.00 \times 10^{-9} M$ $[NC1] = 10.00 \times 10^{-9} M$, $[I_{2}(IXI)] = 4.80 \times 10^{-9} M$ $[NC1] = 2.00 \times 10^{-9} M$, $[NO(DAC)_{2}] = 3.34 \times 10^{-9} M$

	ms of hyro	[NES] REOR	(器) = 20
	M/430) white the included appropriate distribution in the control of the control	in the factor of the control of the	
00	30.70		
05	20.26		
10	9.94		
20	9.26		
40	8.46	24,00	2.60
70	6.96		
100	6.06		
140	5.34		
	4.80		

168 D 147

[NBS] =
$$4.00 \times 10^{-2} \text{M}$$
, [Veline] = $2.00 \times 10^{-2} \text{M}$
[NC1] = $4.00 \times 10^{-2} \text{M}$, [X_CXX) = $4.00 \times 10^{-4} \text{M}$
[NC2] = $1.00 \times 10^{-2} \text{M}$, [NO (DAG) 2] = $3.34 \times 10^{-3} \text{M}$

The state of the s	of pass	Consequence for the control of the c	(de)×107
(ain.)	\$4/1960)	医电子电子 计分类 医阴茎 医皮肤 医皮肤 医皮肤 计多数 医皮肤	
00	7.44		
05	7.12		
10	6.96		
20	6.62		
40	5.50	3.90	0.53
60	4.74		
	3.70		
100	3.30		
	2.34		

2-312 3-18

(TE) × 107	[man] man An	es of hypo	
	·····································	(1/1960)	éain.)
		9.32	Ç0
		8.90	05
		8.70	30
		7.96	20
0.64	4.00	6.40	40
		5.42	60
		4.34	80
		3.36	100
		2.72	120

3.19

	and the same of th	annesse in relative statement of the control of the	
73.00 (mi.s)	al of hygo (1/1860)	[mas] × 10 m	N L-1 S-1
· · · · · · · · · · · · · · · · · · ·	18. (1886年) (1986年) (1886年) (18864) (東京教育教育教育教育の では、「本の「大学教育教育教育教育教育教育教育教育教育教育教育教育教育教育教育教育教育教育教育	erit, mit, verstein til ste
00	12.44		
	12.13		
30	11.92		
30	20,63		
40	9,30	6.40	0.84
60	7.42		
90	4.52		
300	4.52		
130	3.52		

TAME 3.20

0.00×10-4	[valine] = 2.00x10 M
4.00x10 ⁻² m.	[IFGII] = 4.80×10-6M
= 1.00m10 ⁻² m,	[Hg (0xc) ₂] = 3.34×10 ⁻³ H

Taperstare 30°C

Company of the Compan	ml of byto	[2523.12] and the same and the	(%) × 70,
	61/94B) una como un compans de constitue procedo de impreso de comencio.	· · · · · · · · · · · · · · · · · · ·	
CO	7.50		
05	7.42		
20	7.36		
20	6.76		
40	5.82		
60	4.92	7.70	1.00
90	4.08		
120	3.08		
250	2.32		
200	1.92		

[MBS] = 13.33×10⁻⁶M, [Valine] = 2.00×10⁻⁶M [MG2] = 4.00×10⁻⁶M, [IRCLI] = 4.90×10⁻⁶M

 $[KC2] = 1.00 \times 10^{-2} \text{M}, \quad [136 \text{ (DAC)}_2] = 3.36 \times 10^{-3} \text{M}$

Topperdure 30°C

	al of hypo	1967 1965 1966 1966 1966 1966 1966 1966 1966 1966 1966 1966 1966 1966 1966 1966 	(元) x 10
(atra)		e gegelektiken sommeligteligen de beginne de beginne tot en en som som her ette bligen her beken beginne best	H L S
00	12.64		
05	12.44		
10	12.06		
20	21.42		
40	10.26	13.00	2.56
200	7.96		
140	5.44		
200	4.34		
260	1.40		

2001.8 3.32

[NOS] = 16.67×10^{-4} M. [Valine] = 2.00×10^{-2} M [NOS] = 4.00×10^{-2} M. [Lettl)] = 4.80×10^{-4} M [NOS] = 3.34×10^{-4} M

Time	al of two	[NBS] x 10 4	(A) × 10
(333.)	\$1/460) ke dianaga pangangangan pangangan pangangan pangangan pangangan pangangan pangangan pangangan pangangan pangan	the state of the s	
00	7.65		
05	7.50		
10	7.32		
30	6.72		
40	5.82	16.20	1.78
60	5.02		
130	3,12		
	2.34		
240	1.92		

TANK 3.23

		20.00×10 4s.	[valine]	2.00×10 ⁻² M
		4.00x10 ⁻² %,	[umax]	• 4.90×10 M
[KCI]	***	1.00×10 ⁻² M.	[ng (orc) ₂]	= 3.34×10 ⁻³ M

Time	ml of hypo \$4/460)		(\$\frac{1}{25}\) \(\text{pile}\) \(\text{1.5}\)
energia de la constitución de la c	9.20	inga appakan geregaken da uman, sinja mangkan anu makahirin nemakan kilon da manakan kilon da da asa da sa da	
05	0.92		
10	8.50		
30	7.02		
40	6.66	19,20	2.20
70	5.40		
130	3.76		
190	3.02		
250	2.36		

True: 3,24

[MOS] = 25.00 M [Voltoo] = 2.00 M
2
 [MOS] = 4.00 M 2 $^{$

Time	sal of hypo	C 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	(=) x 10 /
AND DESCRIPTION OF THE PROPERTY OF THE PROPERT	\$1/460) sa nagana ili, addinina interativa di materiale d	医腹膜切迹 医皮肤 经成本的 化二甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基	The transport of the state of t
00	11.50		
05	11,20		
3.0	20.86		
20	10.24		
40	9.16	24.30	2.30
80	6.84		
2.40	4.80		
200	3.80		
250	1.09		

The kinetic results recorded in tables 3.1 - 3.8.

3.9 - 3.16 and 3.17 - 3.26 have been Sucreatized in tables

3.25, 3.26 and 3.27 respectively.

2.25

[Glychno] = 2.00x10-201,		4.00×10 ⁻² M
[I = (III)] = 4.80×10-6n.	[10]	1.00x10 ⁻² m
[130 (0.40) ₂] = 3.34×10 ⁻³ m,	Tapporat	uro 30°C

[mai] × v [*]	[NB5] * x 10 M	(-30/00) × 10 ⁷
建设施的现在 (4) 建铁镍铁铁铁 电线机 的现在分词 化二烷二烷 (164-15) - (2) - (2) - (2) - (2) - (3) -		er trock in a state der sie der der der der der der der der der de
6.00	3.15	1.21
5.00	4.60	1.30
6.67	6.20	2.62
0.00	7.45	2.08
13.33	12.30	3.34
16.67	15.20	4.00
20.00	19.40	4.62
25.00	22.90	5.02

(TE) × 107	[NB::]" × 10 M	[HEE] X TO H
	·接受解检查,各种指挥性,使用性性的 (1) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1988年11日本本人教育中的一个大学的一个大学的一个大学的一个大学的一个大学的一个大学的一个大学的一个大学
0.70	3,75	4.00
0.84	4.75	5.00
2,430	6.30	6.67
1.38	7.60	0.00
2.00	12.60	19.33
2.16	16.00	26.67
2.60	19.00	20.00
2.60	24,00	25.00

A HAR 3.27

[valino] •	2.00x10 -2 M,		4.00×30-2M
	1.00x10-2/4.	[IRGIII)] = 4.80×10 ⁻⁶ M
[5(0:0) 01]	• 3.34×10 ⁻³		pensure 30°C

[mas] = 20%		(30) × 107
4.00	3.90	0.53
5.00	4.00	0.64
G .67	6.40	0.86
3.00	7.70	1.00
13.33	13.00	1.66
15.67	16,20	1.70
20.00	19.20	2.20
25.00	24.30	2.30

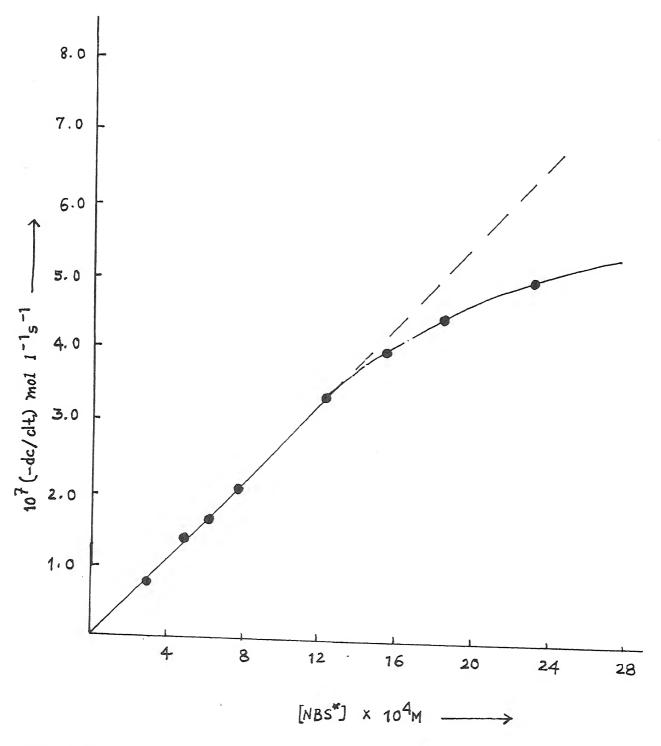


Fig. 3.1 Plat between (-dc/dt) and [NBS*] $[Glycine] = 2.00 \times 10^{-2} M, [Ir(II)] = 4.80 \times 10^{-6} M$ [HC1] = $4.00 \times 10^{-2} M$, [KCI] = $1.00 \times 10^{-2} M$ [Hg(0Ac)₂] = $3.34 \times 10^{-3} M$ Temperature $30^{\circ} C$

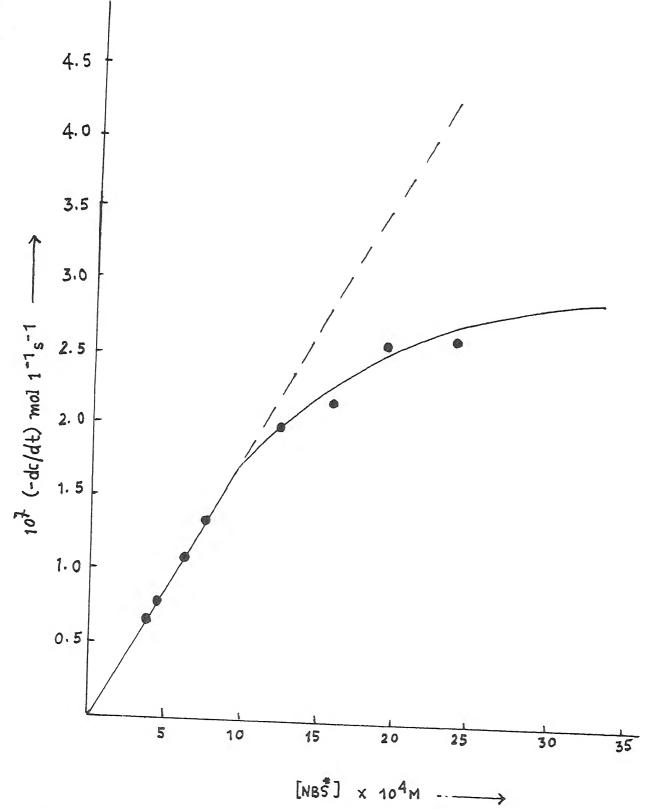


Fig. 3.2: Plot between (-dc/dt) and [NBS]

[Al mine] = $2.00 \times 10^{-2} \text{M}$, [Hg (OAc)₂] = $3.34 \times 10^{-3} \text{M}$ [HC1] = $10.00 \times 10^{-2} \text{M}$, [Ir(III)] = $4.80 \times 10^{-6} \text{M}$ [KC1] = $1.00 \times 10^{-2} \text{M}$ and Temperature 30°C

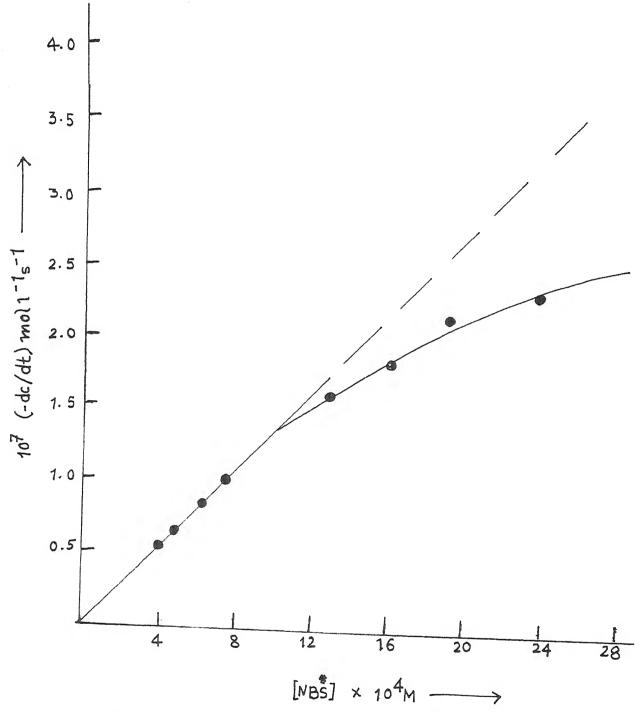


Fig. 3.3: Plot between (-dc/dt) and [NBS] [Valine] = $2.00 \times 10^{2} M$, [Hg $(OAc)_{2}$] = $3.34 \times 10^{3} M$ [HCl] = $4.00 \times 10^{-2} M$, [Ir (II)] = $4.80 \times 10^{-6} M$ [KCl] = $1.00 \times 10^{-2} M$ and Temperature 30°C

3.25, 3.75 and 3.27 these in lower concentration range of uses the value of (de/de) increases linearly but at higher concentrations of was the value of (de/de) tends to attain department and value. This indicates that oddstion of glycine, alemine and value follows first - order kinetics in NBS at its lower concentration range but first - order kinetics kinetics in SBS tends to some order at its higher concentration range.

plotted between () and [NBS] . The curves are linear in lower concentration range of NBS while curve tends to attain the limiting value in higher concentration range of NBS (Sig. 3.1, 3.2 and 3.3). Hence it can be concluded that exidetion of glycine, elemine and value follows first corder kinetics in NBS at low [NBS] and first - order dependence on NBS at low [NBS] and first - order tange of NBS.

CHAPTER AV

> In this chapter the main aim is to study the dependence of the title reactions on the concentration of reducing amino acids vis. glycine, clanine and valine. the this purpose, a set of experiments with verying dondumitrations of each of smino acid but at fixed concentrations of all other reactants have been carried out. Here all expectments have been conducted under 1. olation conditions i.c. concentration of 11-brose anceinistic has been kept comparatively lower than that of each of asino acid in each experiment. The kinetic date obtained in each experiments have been recorded in tebles 4.1 - 4.6, 6.7 - 4.12 and 4.13 - 4.13. Norse also the value of (") how been determined by usual method as described in the provious chapter. The data of tables 4.1 - 4.6, tables 4.7 - 4.12 and tables 4.13 - 4.18 are for evidence of lycins, almine end value respectively.

TANK 4.1

(常) = 10	[NBG] x 10 M	ml of hypo	
2.2 9%	adag tari, ang makalang sang sang sang kaba-gastang sang palahan sa maka-athistan " and anang m	per una reconstruire autoritation de construire de constru	(n3.0.)
		10.78	00
		9.70	05
		9.28	20
		8.60	20
1.12	9,00	9.13	20
		7.40	45
		5.52	
		5.74	05
		4,92	115
		4.00	140

TABLE 4.2

	ml of by po-	[mBs]* × 10*	(de) × 10 v
MAD a)		1988年1日 - 1987年 - 1988年 - 19884 - 1988年 - 198	
00	30.00		
05	20.26		
10	9.62		
20	8.96		
30	8.36	9.00	1.30
40	7.46		
55	6.70		
75	6.00		
100	4.90		
125	4.02		

TEMS 4.3

	= 10.00×10 4.	[dycine] = 1.00	×10 ⁻²
	= 4.00×10 ⁻² 14,	[18011] = 4.80	×10-6
[xa]	- 1.00x10-2 _M	$[16(0.60)_2] = 3.3$	8×20 -3 M
	ol of hypo	u creo do carción de conconerce a maneración en mandadas decidades.	(光)×10 ⁷
(min.)	\$4/1080)	M 11 5-1	
ÇQ	10.00		
05	70.03		
20	9.30		
20	8.26		
30	7.22	9,00	2.02
40	6.26		
	4.90		
90	3.06		
100	3_02		

TABLE 4.4

	eL of hyro	ing yang naman pamin ganaran si yang mangahan panggan panggan panggan panggan panggan panggan panggan panggan [2335] sa 100 sa	(元)×10 ⁷ 以 2 ⁻¹ s ⁻¹
	*	agyakeri la diamaka, 150 julya di saraha kenyike yehi () intiko yeki () intiye 🕸 - 11 let	ক্রে একলে ক্রমণ রাজন ক্রমেন ক্রমেন ক্রমণ ক্রমণ কর্মণ স্থান ক্রমেন ক্রমেন ক্রমেন ক্রমেন ক্রমেন ক্রমেন ক্রমেন ক্রমেন
00	10.90		
05	10.22		
10	9.32		
20	8.04		
30	6.62	98.00	2.52
40	5.36		
50	4.82		
70	3.32		
90	2,70		

Temperature Noc

(3c) × 10 7	[NBS] * MID**	ol of hypo (*/1080)	Time
and the second s	Lithers Land verrige And William Medicans and service mean allegations that Albert in the entire distribution	10.40	O()
		9.54	05
		9.26	10
		5.49	20
3.90	9.00	4,96	30
		4.16	40
		3,36	53
		2,72	GO
		2.00	75
		1.70	90

TABLE 4.6

[mas]	73	10.00×10-4,	[Glycine]	纖	4.00×10-2N
	**	4.00×10 ⁻² M,	[x*(xxx)]	*	4-80×10-6
	類	1.00x10-2	[Hg (DEC)]	40	3.34×10 ⁻³

mine)	ml of hypo (1/1080)	[mb] * x10*m	(de)×10-7
		नामिक्षके महाचे प्रश्निकारको कर्का नोनोहां का नोक्षा के बीहा किन्ता के बाहर विश्वास के एक एक एक प्रश्निक के प्र	dalen dan sama dan sengangan yang dan
00	10.80		
05	8,02		
10	6.04		
25	4.94	9.00	7.78
20	4.28		
25	3.72		
35	3.10		
40	3.02		
50	2.78		

12511S 4.1

Time	al of hypo (1/965)	[NEW] XIO	1 26 3 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
	8.64		
05	8.40		
30	8.28		
20	9.12		
40	7.69	9.00	0.36
70	7.08		
110	6.29		
150	4.76		
260	4.00		

TABLE 4.0

Composeume 30°C

Time	on of hypo	[uss] 210 hs	(震)×107
and the state of t	the / 82.5).	स्त १ (बांबुक्किक्का स्थानकार में स्थान के प्रोत्त के प्रमा त स्थानकार स	H. L.
00	8.64		
05	6.48		
10	8.36		
20	0.10	9.00	0.56
30	7.63		
50	7.00		
70	6.66		
110	6.03		
100	4.92		
260	3.82		

27M.E 6.9

22.000	al of hypo	[mb] * x10 m	(A) × 107
(min.)	\$1/86S)		W 7 - 7 - 1
	a meninciana percolas pròprimente retributo por este de la relición de la relición de la relición de de de la r El 184	不知识的 我们的 我们的我们就是我们就是我们的我们的人,我们们就是一个人,我们们就是一个人,我们们就是一个人,我们们就是一个人,我们们就是一个人,我们们就是一个人,我们	ander vijdere i de i green kultur (oggendigdere gegen gen in en ennem de vijden in veren meer en een een een d
C5	8.36		
10	9.28		
20	7-96		
40	7.28	9.00	0.70
70	6.24		
110	5.34		
180	4.30		
260	3.56		

1/3L2 4.10

[HBS] =
$$10.00 \times 10^{-9} \text{M}$$
, [Alenine] = $1.33 \times 10^{-9} \text{M}$
[KG1] = $10.00 \times 10^{-9} \text{M}$, [KG2] = $1.00 \times 10^{-9} \text{M}$
[I, (III)] = $4.80 \times 10^{-9} \text{M}$, [IG (DAC)] = $3.34 \times 10^{-9} \text{M}$

(nd. 2: a)	ml of hype (4/365)		(養)×10 ⁷ 11 2 ⁻¹ 5 ⁻²
00	8.64		
05	8.30		
10	7.96		
20	7.40		
40	6.52	9.00	0.92
70	5.74		
110	4.78		
190	3.66		
260	3.30		
315	3.30		

2003 6.11

[HEL] =
$$10.00 \times 10^{-6}$$
 [ALEDINE] = 2000×10^{-6} [HEL] = 10.00×10^{-6} [HEL] = 1.00×10^{-6} H. [HEL] = 3.30×10^{-6} H.

Tamparature 30°C

・ 一般の一般の一般の一般の一般の一般の一般の一般の一般の一般の一般の一般の一般の一	estati Samenghamban haliphilipa, oʻrlab istorik idir iliye iliyoti idi. Sherida dherida barinda isti viri estat	tiga (renestrationoligiam) kai a varbate pritaka endastajanteelik tatina, edastaten intava kas ritaksi.	er un spesier i sue regional respessable, altres i sobre materia, que est un distribute faste e sobre productivado de la companio del companio de la companio de la companio della compani
7.1700	nd of hypo	[aus] *10*	(35) × 10.
	(4/865) 	non-page and the confidence of	
00	8.64		
05	8.19		
30	7.00		
30	6.%		
40	5.88	9.00	1.30
60	4.96		
3.0	4.12		
120	3.52		
150	3.02		

TABLE 4.12

Three	mi of hypo	[NBG] * MIO ⁶	(10 × 107
(min.)	41/365)	ger olderstorer) in det gladigeren geb er geber verken der sakte bespränigen, og den elle sengende geber bekomte	M 1 ⁻² 5 ⁻²
00	8.64		
05	7.44		
10	7.32		
20	6.08		
30	5,28	9.00	2.55
40	4.58		
60	3.82		
80	3.42		
110	3.02		

[mas] = 10.00x10-4m.	(value) = 1.00min
[x:1] = 4.00×10 ⁻² n.	[RC3] = 1.00010 M
[3 - Clil] = 4.00×10 -60.	[10 (0/10)] = 3.36×20

Tompereture 30°C

Cimo (min.)	ml of typo	en de service de la constitució de la constituci	(%)×10
00	7.64		
05	7.22		
30	7.35		
20	7.00	9.00	0.56
40	6.53		
70	6.20		
110	5.12		
350	3.30		
290	2.68		

2/48/E 4.16

Camponio Car 300c

Time	ml of hypo 61/764)	in destruction design and the second state of	In calculation to a reconstruction and an interest an interest and int
00	7.64		
05	7.50		
80	7.30		
20	7.00	9.00	0.74
40	6.68		
70	5.60		
110	4.50		
200	3.62		
220	3.80		

TABLE 0.15

	al of hygo	[ms] n10 m	(元)×10 ⁷
1911 15 V	(85/264) pour la catalante esperata la posta de la catalante esperanda de la catalante e la catalante e la catalante e	k (Sek Stage) og er hallette filmer (sek ekkele i Stagen Sekkelingen, hensistek i ofken opprotissen ogser sleve og	
00	7.64		
05	7.30		
30	7.16		
20	7.00		
40	6.20	9,00	0.84
70	5.12		
1.10	4.24		
260	3.20		
220	2.62		

TARK 4.15

These (min .)	ml of hypo		(達)×10 ⁷
00	7,64		
05	7.46		
10	7.10		
	6.74	9.00	2.10
40	5,82		
70	4.90		
310	3.84		
160	2.99		
220	2.22		

17.68 E 4.17

Tapentum 30c

21.00	al of hypo		(TE)×107
00	7.64		
05	7.28		
10	6.96		
30	6-64		
40	5.72	9*00	1.25
60	4.78		
80	3.84		
100	3.42		
120	2.03		

PARLE 4.10

[m:] = 20.00210 m. [voline] = 5.00210 m. [vo

tain.)	est of hypo (n/764)	a na parreta i sena e escription de tras e sena international consentation e esta destruction de consentation [1] [1] [1] [2] [2] [3] [3] [4] [4] [4] [4] [4] [4] [4] [4] [4] [4	
00	7.64		
05	7.00		
30	6.52		
20	5.60	9.00	2.52
30	4.92		
40	4.23		
	3.04		
70	3.16		
100	2.25		

The kinetic require of tebles 4.1 - 4.6, 4.7-4.12 and 4.13 - 4.18 have been expections in tables 4.19, 4.20 and 4.21 respectively.

2.24.2 4.19

[HE] = 10.00210 %. [HZ] = 4.00210 %. [HZ] = 1.00810 %. [HZ] = 1.00810 %. [HZ] = 1.00810 %.

The fact that the same and the	The same of		X = [[] = ine]
A SERVICE CONTINUES CONTINUES SERVICE DE LA COMPANSIÓN DE LA CONTINUE DE LA CONTI	ellericanium monacina mai anciminata a disconocide di disconocide di disconocide di disconocide di disconocide	ikan yaki yaki takagi ili santakiri ila kasabanaki saki saki saki saki saki saki ili ili ili ili ili ili ili i Saki saki saki saki saki saki saki saki s	e Capital contract pri service i salas provincio del contracto del contr
0.67	1.39	1.53	2.20
2.00	2.02	2.24	2.24
1.33	2.52	2.80	2.13
2.00	3.90	4.33	2.17
4.00	3.90	8.64	2.16

[MBG]" = 9.00×10" M (ac which (-60/de) was determined

SVOREGE 12 = 2.24×10-2 m 141 5-1

248.8 4.20

[HBS] = 10.00×10^{-4} H, HC1 = 10.00×10^{-2} H

[MC1] = 1.00 M10 M, Ir (III) = 4.80 M10 M

[m b/c] 2]= 3.34×10⁻³m. Temperature 30°C

	MLIS	5' []	10 ²
0.50	0.36	0.40	0.80
0.67	0.96	0.62	0.98
2.00	0.70	0.76	0.70
1.33	0.92	1.02	0.77
2.00	1.30	2.53	0.77
4.00	2.66	2.95	0.74

[mail - 9.00000 a at which (to) was determined

AVAITABLE & = 0.70x10-17.41

TABLE 4.21

[NEX] = 10.00×10⁻²1. [NEX] = 4.00×10⁻²M

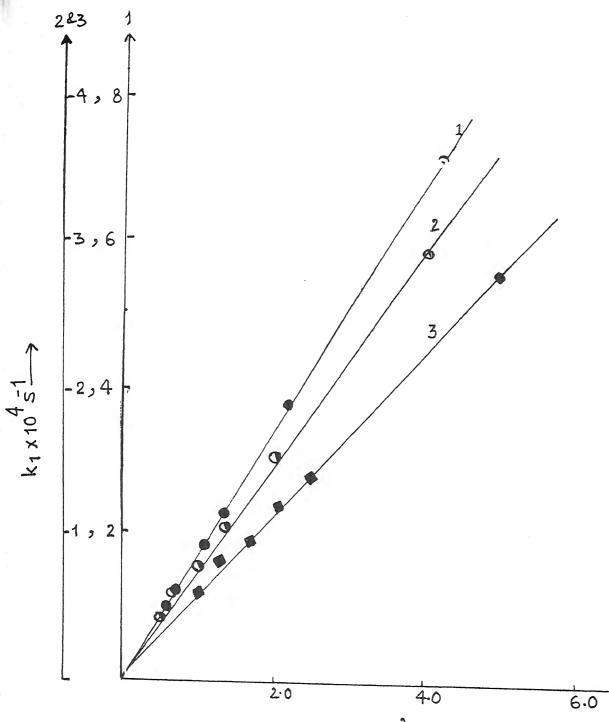
[NEX] = 1.00×10⁻²M. [X=X1X)] = 4.90×10⁻²M

[NEX] = 3.34×10⁻²M. Yesspersone 30⁻²C

Manual strategy and the	* (元) ±10 ⁷ * n 1 ⁻¹ ; -1	<u>s'</u> []	
restament in model internetationals, describes in model in American Control of the Control	gast (1975), gasta met Tamoninos (directinas tibrocitinas tibrocitinas dilentententententententententententent I	aligade com a companya a serie de companya de companya de companya de companya de companya de companya de comp	0.62
2.25	0.76	0.82	0.65
3.67	0.84	0.93	0.96
2.00	1.50	1.22	0.62
2.50	1.25	1.39	0.96
5.00	2,52	2 •80	0.56

[mas] = 9.00 x m as which (2) we dotestined

worden kg = 0.59x10 -1 1+1 1-1



[AMINO ACID] ×10 M --> 1,2 &3

Fig. 4.1: Plot between k₁ and [Amino acid]

(1) → GLYCINE Under the conditions of Table 4.19.

(2) → Alanine Under the conditions of Table 4.20.

(3) → VALINE under the conditions of Table 4.21.

then kinetic data of tables 4.19, 4.20 and 4.21 obtained in exidation of glycles, alamine and value are examined corefully, it is observed that on increasing the concentration of these amino acids the value of the concentration of these amino acids the value of acids oxidation of these amino, follow first order dependence on the concentration of each mains acid i.e. glycine, alamine and value.

kinetics in saino acids is, further, confirmed by plotting a graph between k, values and [caino acids]. A straight lime in exidation of each sains acid is obtained (Fig.4.1). The slope of each curve gives the value of k, The graphical k, value thus obtained is close to average value of k, recorded in the bottom of tables 4.19, 4.20 and 4.21. The closeness in k, values obtained from tables 4.19, 4.20 and 4.21 and graph of Fig. 4.1 closely confirms first - order kinetics in amino acid.

CHAPPER V

COMPUTATION OF ORDER OF RUNGINGS STATE
RESPECT OF REDROCKLORIC ACED IN NESS -READ CIDS AND RESPECTATION OF THE COMPUTATION OF

S • COMPANYATION OF THE PROPERTY OF INCIDENCE OF INCIDENC

This chapter describes the dependence of the mactions finvolving N-brandocciniside as oxident and each of alycine, elamine and valing as reductanto in the provence of iridium (III) chioride en cotalyst) on hydrochloric acid. In order to obtain this aim, a serice of experiments with verying concentrations of hydrochloric acid at fixed concentrations of all other reactants in exidation of each of emino acids one dome. The results of ouch experiments have been recorded in tables 5.1 - 5.6. 5.7 - 5.12 and 5.13 - 5.18 in ordidation of glycine, alemine and valing. Here also all experiments have been carried out under isolation conditions. The value of (2) here also has been determined by usual motiod as described in 3rd charter. Although on changing the concentration of HAI. the value of ionic seconds of the medium also charges. Since preliminary investigations have indicated negligible effect of lonic strength of the medium on the martin rate. Hande no effort wer made to keep fonic atrength of the medium compani.

1111 5.1

Transpersature 30°C

Time (min.)	ml of hypo 6/1120)	a phagas maish ma' akancunan-makasin dan ata mada magamakada dan girin kalinda dah dapan mana 	
00	11.20		
05	9.96		
30	8.48		
15	7.72		
20	7.02	9.00	3.08
30	6.00		
40	5.06		
60	4.08		
90	3.72		

TABLE SAL

[NSG]	10.00×10-4n.	[3ycine] = 2.00×10 ⁻² H
	4.00×10 ⁻² M.	[3 till] = 4.80×10 -6
	1.00×30 ⁻² M.	[ig (UAC) 2] = 3.34×20 ⁻³ y

rime (min.)	al of hypo 01/1120)	[ms] x10	
	\$2.20 \$0.30 9.30 7.34 6.39		
90 60 80	5.96 5.28 4.72 4.28		

TALLE .

420)	10.00mm	(dycine) =	2.00×10 h
Site.	5.00:x20-2M.	[1 x (111)] =	4.80×10 ⁻⁶ H
300	1.00×10 ⁻² M,	[Ity (c.e) ₈]	= 3,34×10 ⁻³

Transcription Sylve

timo	el/1320)	[sas] *10*	
	риссь в современня почення поч В 1 2000	men	4、5、2015、3、5人3、401 等以创新出版。1915年,1915年1915年(1915年)1915年(1915年)1915年(1916年)1916年(1916年)1916年(1916年)1916年(1916年)1916年(1916年)1916年)1916年(1916年)1916年,1916年)1916年,1916年)1916年,1916年,1916年,1916年,1916年,1916年,1916年,1916年,1916年,1916年,1916年
05	80.52		
10	9.32		
20	3.32		
30	7.09	9.00	2.22
50	5,68		
70	4,04		
90	4.42		
110	4,28		

CASSIS SAS

	NIX)	through the first through the second		*		×10 ⁷
120		Makarika kalifa Makarika kalifa k	· "我们是我们的一个,我们们是我们的人们的人们的人们的人们的人们的人们的人们的人们的人们的人们们的人们们们的人们们们们的人们们们们们们	hilador - co - casas	to as Harrie	
1.2						
0.7	N					
9.0)4					
8.6	56					
5.6	30	9.00			2.06	
5.7	76					
4,6	54					
4.3	30					
3.9	30					

	240	10.00m10 N,	[atyche] = 3.00x10 ⁻² m
[ixi]	40	10.00×10 ⁻² m,	[1 (111)] = 4.80×10 ⁻⁴ ×
[kGJ]		1.00×10 ⁻² m.	[Hay (DAC) 2] = 3.34x10 ⁻³ x

Temperature WOC

11 .00	ml of bypo	(022 [220]	(元)×10 ⁷
y jaylakulak ilingit komi atagan makagatan mening ata	%1/1.120)	医腹膜囊炎 医乳腺 化分子元素 化二氯甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基	magagadak sarah ar persagai sarah sara ar kanadak sarah
00	11.20		
05	10.78		
10	10.10		
20	9,20		
30	9.60	9.00	1.32
60	6.52		
90	5.36		
120	4.72		
150	4.22		

[NNA] = 10.00×10^{-3} , [Mycine] = 2.00×10^{-3} , [Mycine] = 2.00×10^{-3} , [MGI] = 1.00×10^{-3} , [MGI] = 3.36×10^{-3} , [MGI] = 3.36×10^{-3} ,

72.00	ml of hypo	MOCK ERRY	(dt)×10
(aln.)	64/1120)	·····································	
	11.20		
05	10.98		
10	10.96		
20	9.86		
40	8.76	9.00	0.04
***	7.30		
100	6.20		
4.30	5.36		
160	4.54		

T-114.5.7

1785		10.00x10-4,	[Alemino] = 2.00 Mio
	\$150 m	2.50×10 ⁻³ N	[x_(iii)] = 4.00x10 ⁻⁶
Two. J		1.00×10 %	[MG \$2AC),] = 3.34×20 ⁻³ M

(nso.)	al of hypo (4/920)	(ms) x30 m	(\$\frac{2}{3}\) 1220 ⁷
OO MARKET TO SEE THE SECOND PROPERTY OF THE S	0.20	Managhan den selas and an anti-selas and an anti-selas and an anti-selas selas selas selas selas selas selas s	igk den vickel, van de fan met den vergen vak en hijne deren jest plei fakten des de ville bestel den de verde fan de bestel de de ville bestel de verde fan de verde fan de bestel de verde fan de verde fan de bestel de verde fan de verde f
05	7.43		
10	7.08		
30	6.03		
30	5.48	9.00	2.26
40	4.70		
50	4.14		
65	3.40		
95	2.50		

Treat 5.0

[NMS] = 10.00×10 ⁻⁴ M.	[Alanine] = 2.00x10 ⁻² M
[HCI] = 4.00×10 ⁻² m,	[I=(111)] = 4.80×10 ⁻⁶ H
[KC3] = 1.00m10 ⁻² m.	[Hg (OAC) 2] = 3.34×10 ⁻³ H

Tamperoture 30°C

Time	ml of hypo	[PINE] XXXV	1 1-1 5-1 (#) x10,
00	8.20		
05	7.52		
10	6.80		
20	5.40	9.00	1.94
40	4.80		
60	3.62		
80	3.28		
100	2,48		
3.20	2.00		

20ES 5.9

[NBS] = 10.00x10⁻⁷M, [Alexand] = 2.00x10⁻⁷M [NC1] = $\times 10^{-7}M$, [3.01x1)] = 4.80x10⁻⁷M [NC1] = 1.00x10⁻²M, [Ny (OAC)₂] = 3.34x10⁻⁷M

(養)x10 ⁷		ml of hypo	rime
	n pilikan ngali watan sikina dinawa libin a dinawa ngahannagi da digika i ngahan nangan nanga katan mananga ma		
		8.20	00
		7.76	05
		7.50	30
		6.74	20
1.62	9.00	5.42	40
		3.62	80
		3.42	100
		2.74	120

TABLE 5.10

[NBS] = 10.00×10⁻²N. [Alentho] = 2.00×10⁻²N [NGI] = 6.67×10⁻²N. [I₂(IXI)] = 4.80×10⁻²N [NGI] = 1.00×10⁻²N. [NG(0Ac)2] = 3.34×10⁻²N

tain.)	m2 of hypo	[mas]**mao*m	("器) × 20"
	•	and the state of the	
00	8.20		
05	7.80		
70	7.60		
20	6.92	9.00	1.46
40	5.60		
70	4.04		
100	3.34		
130	2.72		
160	2.36		

2.028 S.11

Time (min.)	ml of hypo (4/620)	[NES] and	(一章)×10 ⁷ 8 1 ⁻⁴ a ⁻¹
00	8.20		
05	8.04		
10	7,64		
20	7.08		
40	6.08	9.00	1.06
70	4.94		
100	4.12		
130	3.22		
160	2.92		

TABLE 5.12

Time (min.)	ml of hypo		(電)×107 ×1-1 s-1
00	0.20	ingkaligat applications per eministration interested interested and in the control of the contro	
05	9.09		
30	7.84		
20	7.42	9.00	0.82
40	6.32		
70	5.34		
100	4.36		
130	3.56		
160	2.70	•	

1-518 5.13

[anns]	44	10.00×10-4,	[valine] = 2.00x10 -2 M
	鑢	2.50×10 ⁻² H,	[1111] = 4.80×10-4
[kaj]		1.00×10 ⁻² M,	[Hg (DAc) 2 = 3.34x10 -3

Temperatura 30°C

Time	nd of hypo	[Mas] might	(\$\frac{1}{2} \) > 10 ⁷
		aut aganggalan nggiga nat ta maknilikanshilika cirina transpiral maknilikaknili aknilikasan,ilang saker akani	· 通知表現的 · · · · · · · · · · · · · · · · · · ·
00	6.20		
05	7-44		
10	7.06		
20	6.04		
30	5.50		
40	4.72	9,00	2.28
50	4.14		
68	3,46		
95	2.50		

2: 72.2 5.34

	98	10.00-10 M.	[Volume] =	2.00×10-2
	***	4.00×10 ⁻² M,		4.80:10
[wal]	44	1.00x10 ⁻² M.	[in (va) ₂]	- 3.34:10 ⁻³

7.400	al of hypo	[was] *10%	(TE) x 10"
	6/030)	- Alleghandigha-ligh States - Barristey and Primate-way transp subject to the super State (Security States)	
00	8.20		
05	7.50		
10	6.36		
20)	6.34		
30	5.00	9.00	1.94
40	4.00		
50	3.64		
00	3.26		
100	2.50		
130	2.00		

PARIS 5.15

$$[NBI] = 10.00 \times 10^{-1} M$$
 $[Voline] = 2.00 \times 10^{-1} M$ $[RCI] = 5.00 \times 10^{-1} M$ $[I_{C}(111)] = 4.90 \times 10^{-1} M$ $[RCI] = 1.00 \times 10^{-1} M$

**Lane	al of hypo	[DENS] MAD N	(一號)×10 ³
(min.)	#4/820)	k, op oman v. state vilken vilken sigen sigen i ske virkelinger vilke strøm ske kallensenske omkete omkete ske	N 1 5 5 5
00	8.20		
05	7.74		
10	7.46		
30	6.74		
40	5.44	9.00	1.64
60	4.06		
90	3.62		
100	3.42		
120	2.70		

TABE 5.16

[NES] =
$$10.00 \times 10^{-9} \text{M}$$
, [Valing] = $3.00 \times 10^{-9} \text{M}$
[NES] = $6.67 \times 10^{-9} \text{M}$, [x.0221] = $4.80 \times 10^{-9} \text{M}$
[NC3] = $1.00 \times 10^{-9} \text{M}$, [NG (DAC)] = $3.34 \times 10^{-9} \text{M}$

Time	ent of hypo	ter same sit samen mengelepana siyan keneralan mengelepana siyan menerala samen menerala siyan menerala siyan [2453:55] 2	(3c)×107
en e	rangan sahan daga an dari sahan d	ৰত প্ৰকৃত পাৰকে কৰিছে। নিৰ্দেশ প্ৰতিয়া পাৰিছে। প্ৰৱেশ কৰি বিশ্ব কি নিৰ্দেশ বাৰি বিশ্ব কৰি কৰিছে। বাৰি বিশ্ব কৰি বি	negaring philosophic men some neder verbil der og på till en til en
05	7.78		
10	7.60		
20	6.90		
40	5.60	9.00	3.46
70	4.04		
100	3.34		
1.30	2.72		
3.60	2.56		

NABLS 5,17

[nas] ·	10.00x10 4,	[valine] = 2.00x 10 ⁻² M
	10.00×10 ⁻² M,	[I=(LII)] = 4.80×10 ⁻⁶ M
[KG1]	1.00×30-2 H.	[Hg (DAC) 2 = 3.34x10 -3

(一震)×10 ⁷ n 1 ⁻¹ s ⁻¹	[mos] ato	m) of hypo h/920)	Time
aleksen fine sender selder selftenen for sälde i mittel ellerfallegleringstellerindelt beter fällen little til	alendare de vive in era interioralisación de desperación de desperación de desperación de desperación de despe	un periode de la constante de	en in our de la company de COO
		8*03	05
		7.64	1.0
		7.08	20
1.06	9,00	6.04	40
		4.94	70
		4.08	100
		3,22	130
		2,92	160

ZABLS 5,10

$$[NBE] = 10.00 \times 10^{-6} M$$
, $[Velice] = 2.00 \times 10^{-6} M$
 $[RCI] = 13.33 \times 10^{-6} M$, $[Ie (III)] = 4.80 \times 10^{-6} M$
 $[RCI] = 1.00 \times 10^{-2} M$, $[Hg (DAC)_2] = 3.34 \times 10^{-6} M$

fide.)	ml of hypo	[mas] neo n	(元) x10 ⁷ n 1-1 s-1
00	8.2		
05	8.04		
10	7.84		
20	7.42		
40	6.32	9.00	0.80
70	5.36		
100	4.34		
130	5.56		
260	2,66		

The kinetic results recorded in tables 5.1 - 5.6, 5.7 - 5.12 and 5.13 - 5.18 have been sum marised in tables 5.19, 5.20 and 5.21 respectively.

9A344 5.19

[NDS] = 10.00×10 ⁻¹ M.	[Glycine] = 2.00x10 ⁻² H
[xc1] = 1.00x10 ⁻² m.	[Ir(III)] = 4.80×10 4
$[Hg(0/c)_2] = 3.34 \times 10^{-3} M_{\odot}$	Temperature 30°C

[11C3] × 30 ² H	(震)2207	k ₂ × 10 ⁴	
	H 3-8 H-8	8	
	, igga sakenika ngiro ngaruna karo nga katalahanganang naggo daga nasa ng ngiras saor nasi dag ngira	nje vikos tegislakov post i jek kiri. 10. 1110. 1110 i 1100 i	Approximate design
2.90	3.98	4.31	
4.00	2.52	2.00	
5.00	2,22	2.47	
6.67	2.06	2.30	
10.00	1.32	1.47	
13.33	0.94	0.93	

[NBS]" = 9.00x10-4M at which (-de/es) was determined

RADLE 5.20

[NBS] =
$$10.00 \times 10^{-6}$$
 M, [Alanime] = 2.00×10^{-6} M
[XC1] = 1.00×10^{-6} M, [2 (XII)] = 6.90×10^{-6} M
[N3 (DAC) 2] = 3.34×10^{-6} M. Temperature 30° C

[HC3] x 30 ³ H	(=do)×10 ⁷ N 1-1 s-1	а _д и 10 ⁴	
我 我也没有一个我们的,我们还没有什么可能的说法———我们就像一点一个时间,也不会不会一个一个,我们也没有一个一个,也不是我们的我们就会们	解心器 经收益 化二甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基		
2.50	3.26	2.53	
4.00	1.94	2.15	
5.00	1.62	1.80	
6.67	1.46	1.62	
10.00	1.06	1.10	
13.33	0.82	0.91	

[NBS] = 9.00x10 % at which () wes determined

114.6 5.21

[NHS] - 10.00×10-4,	[valse] = 2.00×10 ⁻² m
[xCl] = 1.00x10 ⁻² x.	[1 (111)] = 6.90×10 ⁻⁶ H
16; (OAC) 2 = 3.34×10-34.	Temperature 30°C

[:KC1] N 10 ²	(-de) × 107	k ₃ × 10 ⁶
M	N 2 3 3 3	
Application of the control of the co	on committees qui le se resposse guaranteres des remains disse nels plus primer interessant que.	2.3
4.00	3.96	2.15
5.00	1.64	1.02
6.67	%.4 6	1.62
10.00	1.06	1.18
13.33	0.00	0.89

[was] . 9.00 x which () was plotted

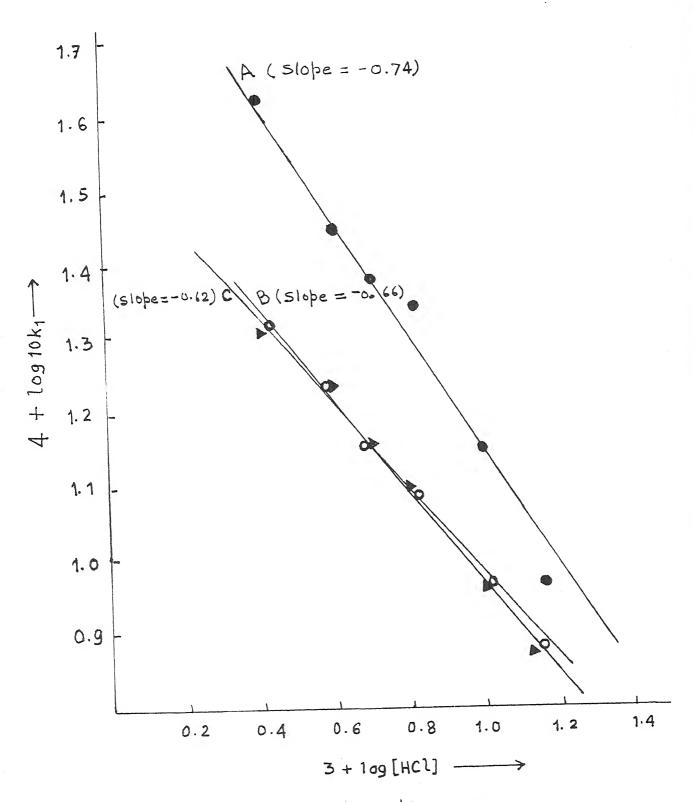


Fig. 5.1: Plot between log k_1 and log [HCl] $A \rightarrow GLYCINE$: under the conditions of TABLE 5.19. $B \rightarrow ALANINE$: under the conditions of TABLE 5.20. $C \rightarrow VALINE$: under the conditions of TABLE 5.21.

tables 5.19, 5.20 and 5.21 that the first - order rate constant decreases on increasing the concentration of hydrochloric acid in order to each of glycine, alanime and value by M-bempsuccinimide. This indicates that order of the aforesaid radox systems with respect to hydrochloric acid is negative fractional as no relation—ship is observed between [MCL] and kg.

to order in HCl is confirmed by graphical method on plotten 7 log k, against log HCl in each amino acid oxidations (Eig. 5.1A, 5.1B and 5.1C). A straight line with negative fractional slope is observed in each graph. This condition that order in HCl is negative fractional in oxidation of divine, slenter and value.

CILPISA VI

OMPUTATION OF GREER OF REACTION OF RESERVE TO DESCRIPTION OF ANTRO ACTUS
BY ACTURE SATURDS OF N-BRONOSUCCURINDS

redox system as homogeneous catalyst. In this chapter an attempt has been made to determine the order of the reaction with respect to I_x(III) in all redox systems involving N-bromosuccinimide as exident and glycine, alanine and valine as reducing substances. For this purpose a number of experiments with different concentrations of I_x(III) but at fixed concentrations of all other reactants in exidation of each amino acide have been carried out and the results of such experiments have been recorded in tables 6.1 - 6.6, 6.7 - 6.12 and 6.13 - 6.18 in exidation of clycine, elemino and values respectively. Here () walker in each case have been determined as usual as described in 3rd chapter.

TABLE 6.1

[NSS] =
$$30 \times 90 \times 10^{-6} M$$
, [If (III)] = $0.60 \times 10^{-6} M$
[NSS] = $4.00 \times 10^{-2} M$, [Glycine] = $4.00 \times 10^{-6} M$
[NSS] = $1.00 \times 10^{-2} M$, [Hg (IAC)₂] = $3.34 \times 10^{-6} M$

Comperature 30°C

Time (min.)	ml of hypo (M/490)	[NBS] x to	(%)=10° H 1 ~ 5
00	9.76		
20	0.62		
40	7.94		
80	6.86		
120	5.84	28.40	1.08
160	5.06		
240	3.90		
320	3,12		
400	2.54		

PALE 65

Tempornbura 30°C

71.00 (nd.11.)	nd of hypo (4/490)	[H 855] READ IN	(%)×10 / M 1 - 1 5 - 4
0	9,76		
10	8.64		
20	7.96		
40	6.82	18.40	2.30
60	5.82		
90	5.04		
120	3.92		
160	3.10		
200	2.56		

TABLE 6.3

nao	ml of hypo (4/490)	ingenorativa ana manguarina para manguarina para manguarina ang manguarina para manguarina para manguarina par [(元)×10 / n 1 -1 s-1
00	9.76		
10	8.24		
20	7.54		
40	6.38		
60	5,42	18.40	3.32
80	4.82		
120	3.62		
160	2.80		
200	2.36		

TARE 6.4

[HBS] = 20.00×10⁻¹M, [18(XXX)] = 2.40×10⁻¹M [HCX] = 4.00×10⁻¹M, [MyCAMO] = 4.00×10⁻¹M [HCX] = 1.00×10⁻¹M, [MyCAMO] = 3.34×10⁻¹M

Tempo zatare 30°C

Time	ml of hype	[885] x20 N	(光)=107
(min.)	(4/490)	agglassifikker (5)- vir paparolis järenga vide jaka agsa agsa agsa sasa vide vide vide vide vide vide vide vid	N 1 5 5
00	0.76		
10	9.00		
30	7.12		
40	5.08	18.40	4.14
60	5.16		
80	4.62		
130	3.40		
140	3.00		
160	2.44		

TABLE 6.5

Time	mt of hypo	[HBS] #30 H	(完)×30 ⁷
(min.)	\$1/450)	annialan memorum diring samuningkah kada bergai sahun salam samuningka diran sakur sam	aportes escriptivos de contrata de contrat
00	9.76		
05	8.26		
10	7.52		
20	6.40		
30	5.40	18,40	6.95
40	4.06		
60	3.60		
80	2.02		
200	2.40		

24848 6.6

tain.)	ml of bypo (*/490)	[HB5] ** 10 4 M	(元)×10" N 1 - 1 - 1
Bereichten vertrebeitung er von derstempelen vertr. vertrebeitung vertre	ne ann amainm an iad ann an iad ann an iad an an iad an an iad an	衛衛兵が、一般人が中国国際省場を 関いる。 1987年 - 1988年	
05	8.02		
10	7.28		
20	6.02		
30	5.04	28.40	9,43
40	4.56		
90	3.88		
60	3.26		
90	2,68		

4500 6.7

(min .)	ml of hypo 64/430)	[res] reo	
00	0.56		
20	9.36		
40	7.86		
160	6.52	19.00	0.65
280			
400	4.62		
500	4.28		
600	3.66		

TABLE 5.8

[NDS] = 20.00x10*4	$[x_*(121)] = 1.20 \times 10^{-6} M$
[N.3] = 10.00×10 N.	[alonine] = 4.00x10 - 3 m
[KC3] = 1.00×10 4.	[169 (DAC)2] = 3.34×10-3

Tungarature 30°C

fein.)	ml of hypo (4/430)	[MBS] ELO H	
agagi aya aya ada aday ar ilada ayar ayar ayar a	0.33		
10	8.16		
30	7.90		
40	7.24		
60	6.54	19.00	1.26
140	5.30		
	4.68		
260	4.36		
320	3.70		

TABLE 5.9

[MBS] =
$$20.00 \times 10^{-6} \text{ M}$$
. [2.031] = $1.80 \times 10^{-6} \text{ M}$
[MC1] = $10.00 \times 10^{-6} \text{ M}$. [Alenine] = $4.00 \times 10^{-6} \text{ M}$
[MC1] = $1.00 \times 10^{-6} \text{ M}$. [MC1] = $3.34 \times 10^{-6} \text{ M}$

karaki suken jeleti naki sakisakirkenin ensi dinakak	al of hypo	consiste consistente associatario della sistema sistema consistenti con in consistenti con in con in discontin [\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	(= 0) × 10 7 × 1-1 = 1
(min.)	6/430)	tion registrates all a committee that is considered absolute national states and in highest measurable that	
00	9.56		
30	7.96		
20	7.68		
40	7.00		
60	6.56	19.00	1.94
60	6.24		
100	5.52		
140	4.92		
200	4.34		

CAR 6.10

0.00x30 ⁻⁴ %,	[1, (11)] = 2.40×10 ⁻⁴ H
0.00×10 ⁻² %,	Alenino = 4.00x10 M
.00×10 ⁻² M.	[19 (014) ₂] = 3.34×10 ⁻³ M

Tompe cuture 30°C

Time	ml of hypo \$4/430)	[NES] MAO M	
00	0.56		
05	8.18		
10	7.92		
20	7.30	19.00	2.56
40	5.50		
70	5.32		
100	4.62		
130	4.30		
160	3.76		

TABLE 6.11

(一篇)×10 ⁷	[NBS] NIOM	al of hypo	21.00
At a walk principal property and property an		(·/430)	(sin.)
		9.56	00
		7.88	05
		7.68	3.0
3.82	19.00	7.02	20
		6.28	40
		5.06	70
		4.36	100
		4.00	130
		3.60	160

WARE - 6.32

[NES] *		20.00×20 M,	Alanine		4.00x10-2
[122]	P	10.00×10-2 _M ,	[xrain]	***	5.40×10-6
[xa]		1.00×10 -2 M.	Hg (0/6)2	纖	3.34×10 ⁻³ M

75.000	al of hypo	[mag] × 10 M	(%)nio
(min.)	64/430)	ik-tap-nain-saka-saka-saka-saka-saka-sa	
00	8.56		
05	7.62		
20	7.46		
20	6.80	19,00	5.60
30	5.36		
40	6.00		
60	5.38		
90	4.62		
200	4.00		

17.18.2 6.13

[NBS] = 20.80×10 M.	[Valine] = 4.00×10 ⁻² M
$[H31] = 4.00 \times 10^{-2} M_{\bullet}$	[1 (111)] = 0.60×10-6
[NC1] = 1.00×10 ⁻² M.	Hg (One) 2 = 3.34m10 -3

(mi.m.)	ml of hypo (n/460)	[NBS] X30 ⁴ H	(一震)×10 ⁷ H 1 ⁻² s ⁻²
•	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
00	9-30		
20	8.90		
40	8,46		
80	7.84	19,20	0.56
3,60	6.70		
280	5.98		
360	5.02		
420	4.69		
500	3.82		

2001 S 6414

[NB.] =
$$20 \times 00 \times 10^{-4} M_{\odot}$$
 [Valine] = $4 \times 00 \times 10^{-2} M$
[NC1] = $4 \times 00 \times 10^{-2} M_{\odot}$ [RC1] = $1 \times 20 \times 10^{-2} M$
[NC2] = $4 \times 00 \times 10^{-2} M_{\odot}$ [NC2] = $3 \times 34 \times 10^{-3} M$

Time:	al of hypo (4/460)	[uss] x10	(==)×10 ⁷ × 1-1 s-1
	ander som eine eine eine eine eine eine eine ein	न्यान्त्रात्त्री कारकारको को कारकारको प्रस्तिक क्षेत्र के अपने कारकारक का विकास का कारकारक का निर्देश का उनकार स्थापन	(Topics - 1885-17-188-17-1885-18-18-18-18-18-18-18-18-18-18-18-18-18-
00	9.20		
10	8.94		
20	8.50		
40	7.82		
80	6.72	19,20	1.00
140	5.52		
100	5.04		
220	4,62		
260	3.60		

TABLE 6155

$$[N 35] = 20 \times 10^{-4} \text{M}, \qquad [Valine] = 4.00 \times 10^{-4} \text{M}$$
 $[N 35] = 4.00 \times 10^{-4} \text{M}, \qquad [X_{1}(XXX)] = 1.80 \times 10^{-4} \text{M}$
 $[N 35] = 4.00 \times 10^{-4} \text{M}, \qquad [N_{1}(XXX)] = 3.34 \times 10^{-4} \text{M}$

Time	ml of hypo 61/460)	[NUS] 230 M	(%)×10 /
		describerado conferente atribajo en el como e	सर्व प्रमृत करते प्रत्येक्षणानीतः ती कृति होते हैं । येक्षणानिकार क्षेत्रकार क्
00	9,20		
10	8.72		
20	8.22		
30	7.86		
40	7.56	19,20	1.52
60	7,02		
	6.26		
130	5.68		
140	5.00		
100	4.63		

T/BLE 6.16

11.00 (ad.1)	m) of hype (1/460)		(36)×10 / 3 / 3 / 3 / 3
and the second s	e mai i te i vinut apotenta simbani aratikanja pari uni i pini pini api i pi $oldsymbol{9.20}$	ामा करणावक राष्ट्रिकेशिक में में मामाजार का नेका शर्मिक रूप मामीमा ५ का मामीकाली हैं। इस कारणावक राष्ट्रिकेशिक मामाजार का नोमाजार का नोमाजार का नामाजार के मामाजार का नामाजार का नामाजार का नामाजार	स्था-तुष्टे संबोधना व्याप्तः त्यानं संबोधीत् क्षणा गाँगने प्राथमित्रः विष्यं संबोधीत्यात्राम् विषयि संबोधीत्या
20	8.60		
30	8.02		
30	7.52		
40	7.36	19.20	2.14
60	5.66		
90	5.04		
110	5.30		
140	4.78		
100	4.32		

2ABLE 6.17

rime (min.)	ml of hypo	[was] x404m	
00	9.20		
05	8.74		
1.0	9.24		
20	7.54		
30	7.04	2 19.20	3.06
40	6.24		
60	5.60		
80	4.83		
100	4.20		
120	3.69		

TABLE 6.18

Temporature.	30	O res
--------------	----	-------

	Time	nl of hypo	ina an ann an	(= 0)×10 9
	(ain.)	6-/4-50)	化原素 医骨骨 医阴茎 医肠肠炎 医环境 医原子 医皮肤 医皮肤 医皮肤 化二甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基	The same and the s
And the second s	00	9.20		
	05	0.63		
	10	8.08		
	20	7.34		
	30	6.02	19,20	4.60
	60	6.02		
	50	5.62		
	60	5.20		
	80	4.62		
	100	4.06		

The kinetic results reported in tables 6.1 - 6.6, 6.7 - 6.12 and 6.13 - 6.18 have been summarised in tables 6.19, 6.20 and 6.21.

7ABLS 6.19

[NBS] = 20.00x10 4,	[dycano] = 4.00×10-2
[K3] = 4.00x30 ⁻² H,	[KC1] = 1.00×10 ⁻² M
[Hg (0/e) 2] = 3.34x10 -3m,	Temperature 30°C

[IN (IN)] X10 ⁶ H	y ("器)x10" y n 1~1 s~1		M'LSI
nggalandansynsi inandustasiananni et enereteter til synsteni pedri i Ö "BÖ		0.59	9.83
1.20	2.30	1.36	9.50
1.80	3.32	1.80	10.00
2.40	4.14	2,25	9,38
3.60	6.98	3.57	9.92
5.40	0.02	5.34	9.09

[NB.] - 18.40x10-4 as which () was detectioned

TABLE 6.20

NBS = 20.00×10-4M.	[Alanine] = 4.00x10 ⁻² M
HC1 = 10.00×10-2 M,	[NG1] = 1.00×10 ⁻² H
[HQ (0/40) 2] = 3.34x10-3y,	Tempe potoure 30°C

*(111)]×10 ⁶	* (**) x30	104k = 4 -do/de/	10 ² k ₂ = k ₁
aggazzággaran "Nyskyy Takogyalan-videkkozágyin (1812–1914) alak 1918	ŷ H 2 ⁻¹ 5 ⁻¹ ÿ		M'L3' [
0.60	0.65	0.34	5.66
1.30	1.26	0.66	5.55
1.00	1.94	3.02	5.66
2.40	2.56	1.35	5.42
3.60	3.02	2,01	5-60
5.40	5,60	2.99	5.54

[NDS] = 19.00×10 M at which (-de/de) was determined

7A372 6.21

egggeneration (and the first term of the control of	H 1-1 H-1		M'LSI
0.60	0.56	0.29	4.83
1.20	1.08	0.56	4.67
1.80	1.52	0.79	4.20
2,40	2.34	1.11	4.66
3,60	3.06	1.59	4.42
5.40	4.50	2.40	4.44

[abs] = 19.20x10 ds at which (to) was determined

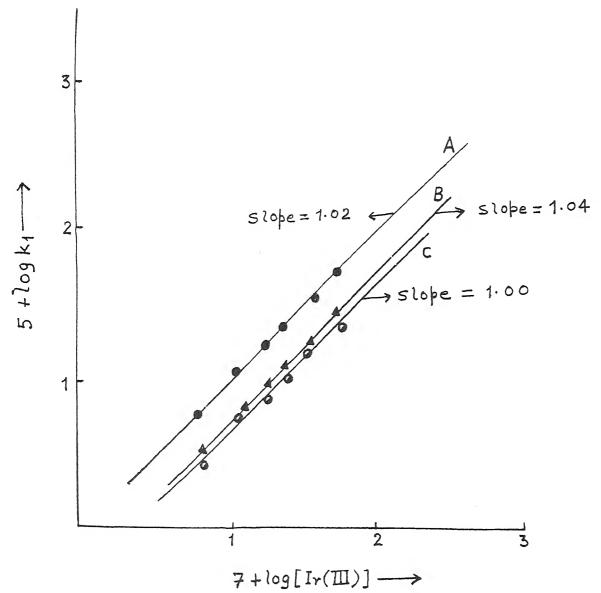


FIG. 6.1: A -> Under the conditions of Table 6.19 (GLYCINE)

B -> Under the conditions of Table 6.20 (ALANINE)

C -> Under the conditions of Table 6.21 (VALINE)

and 6.21 that on increases in direct proportionality which the value of k, increases in direct proportionality which whose that order of the reaction with respect to Ir(XII) is one in exidation of each mains acids used here. The constant values of k, also confirm first order in Ir(XIII).

e streight line with (Pig. 6.1) slope meanly one is obtained. This shows that all reactions follow first -order kinetics in Iridium (III) chi-oride in oxidation of all emino acids used here. The constant ky values of tables 6.19, 6.20 and 6.21 confirm that order with respect to Ir(III) is one.

GIRANEN VIII.

DETERMINATION OF DEPARTMENT OF MEACHINGS
OR CHEARIDE LOSS IN HBS-AGIND ACIDS RELOW.

SYSTAL TOTAL LAND ACIDS RELOW.

7 • DETRICUIAND OF DEFINEARCE OF REACTION OF GREATER CONTRACTOR IN 185-4450 ACTION OF SYSTEM

In this chapter as attempt has been made to determine the effect of addition of chieride ions on the mate constant of Ir (III) chloride detalysed exidation of slycing, elemine and valine by acidic solution of M-barraneciniside. For this purpose in this chapter potossium chloride has been used as southe of chloride ions. In owier to obtain the above sig, various experiments have been personed at different concentrations of potession chieside out at sixed concentrations of all other reactants. It has been observed that reactions are not influenced by changing the concentrations of potassium chloride. This grows send effect of addition of chloride tons on resction between KBS and each of amino acids. The kinetic results resorted in tables 7.1. 7.2 and 7.3 in semmericad form closely allow negligible offect of beded chloride iors on the reaction rate.

2711.1

[HBS] = 10.06×10 %.	[dycine] = 2.00x10 ⁻² m
[HCI] = 4.00×10 ⁻² M,	$[x_{\pi}(xxx)] = 4.80 \times 10^{-6} \text{M}$
$[H_3(0AC)_2] = 3.34 \times 10^{-3} H_4$	Topperature 30°C

ECT. 3 10 ² M	k, × 10 ⁴
1.00	4.33
1.50	4,28
2.00	4.30
2.50	4.32
3.00	4.29
3.50	4.31
4.00	4.20

12.11 7.2

[1006] = 10.00×10 4.	[Alenino] = 2.00×10 ⁻² M
[HC1] = 10.00×10 ⁻² H.	[1-(11)] * 4.80×10 ⁻⁶ ×
[Hg (DAC) 2] = 3.34×10 ⁻³ H.	Temperature 30°C

1.00	3.53
3.50	1.96
2.00	2.50
3.00	1.50
4.00	2.54
5.00	3.53
6,00	3.49
7.50	3.5

[NBS] = 10.com to H.	Vedine = 2.00x10-2
$[183] = 6.00 \times 10^{-2} \text{ M}.$	[x, ann] = 4.80×10 ⁻⁶ m
[10 (0/c) ₂] = 3.34×10 ⁻³ M,	Temperature 30°C

[KCI] H 10 ² H	acc ^{-A}	
		timá
The state of the s		10%
1.00	1.22	
2.00	1.20	
3.00	1.25	
4.00	1.23	
5.00	1.24	
6.00	1.23	
7.40	1.34	

GRUPIR VILL

DEPOTRATION OF DEPOTRATION OF BEACHTONS OF B

> In the present thouse necessic ecetate has been used as souvenger for binnide time as binnide time (reaction product) on interaction with MBS produced Br, which complicated the reaction by watting emotion porallel oxidations. Mercuric acotate can also function as exident and catalyst. Hence in order to prove whather it acts in the present case as exident or not, some experiments were carried out with morouric ecetate without adding MSS in the modetion mixture and it was observed that reactions did not proceed. Hence possibility of its action as estdent is called out. Now here in the propent chapter on extempt to being made to see whether it is involved as datalyst or not, The results of experiments performed as different consumtantions of merceric acesste am recorded in tables 8.1. 8.2 and 9.3 which indicate negligible effect of memberic oceants proving that it is not knowled as homogeneous catalyst.

2.27

2.22

2.24

2.22

2,26

[mas] = 10.comb	[fix] - 4.00x10***
KCI] = 2.00×10-2 H.	[I, (XXX)] = 4.80×100 48
[dycine] = 1.00min 4.	Temperature 30°C
[16] (D. C) 2] H 10 ³ H	
application of the contract of	erstegen varanden der schiede kannet vår micht seiten 2005 in in Personne ditter in deriverligen der kontrol state verhalte det geste verhalte det
1.50	2.26
3.75	2.20

2.00

2.50

3.00

3.34

3.50

TABLE 0.2

	10 .00x10 M,	[1831] = 10.00x10 ⁻² M
[Kil] ·	2.50×10 ⁻³ N.	[1, (111)] = 4.80×10 ⁻⁶ M
Menino	= 4.00x30 ⁻² %,	Temperature 30°C

FRO (D/43) 2 IK 10 ² M	
1.25	2.95
1.50	2.92
2.00	2.93
2.50	2.98
3,00	2.94
3.34	2.95
3.75	2.90
4.00	2.93

TABLE 0.3

	10.00×10 ⁻⁴ %,	[H33] = 4.00x30 ⁻² H
	3.00×10-8 M.	$[x_2(xx)] = 4.80 \times 10^{-6} \text{M}$
[valine]	= 2.00x10 ⁻² m,	Tunger mature 300cm

	2.22	
1.30	1.20	
3.00	1.23	
2.50	1.24	
3.00	1.19	
3.50	1.25	
4.00	1,24	
5.00	1.22	

GIAPPER IX

DEPENDENTION OF EFFECT OF VARIATION OF LONG STREET, OF PROJUM ON BASE CONSTANTS.

OF OXIDARION OF AUDIO ACIDS BY ACTUAL SEE

SKAUTTONS, MICH. 1 - UII) AS CAMMES

DETERMINATION OF CREEKING OF VARIATION OF 10032 STREETING OF CREEKING OF BACK OF CREEKING OF ACTUAL STREETING OF THE STREET OF CREEKING OF THE STREET, THE STREET OF THE STREET OF THE STREET OF THE STREET OF THE STREET, T

lonic strongth of the medium plays an important molo in the field of Staby of reaction medhanism. It helps to detect the nature of meetive species i.e. whether the reactive species are similarly charged or dissimilarly charged or one of them is nautral. Thus nature of macting species involved in the more deveraging step is determined by means of kinetic sended. In order to obtain the above aim, a few experiments with different ionic strengths of the modium have been conducted at constant consontrations of all other menotionts and results of these experiments have been operations in tables 9.1, 9.2 and 9.3 in exidation of plycine, alemine and valine respectively. These results closing indicate requisible effect of variation of ionic occupyen of the medium on the measuren rate of the title reactions. Ionic strength of the addism has been varied by the addition of suitable assurts of sodium perchlorate.

1/012 943

[NB.:] = 10.00x30 4,	[KI] = 10.00x10 = 1
[Alenine] = 1.00×10 ⁻² m.	[RG1] = 4.00×10 ⁻² M
[x = 0xxx)] = 4.80×x0 ⁻⁶ %,	[110 (CAC) a] = 3.34340-3H

MACTO STATE M	Ionic stangth (Wxi	
· · · · · · · · · · · · · · · · · · ·	· 中心,他们还是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个	See
0.90	2.40	0.78
1.00	3.40	0.79
2.00	4,40	0.80
3.00	5-40	0.77
4.00	6-40	0.79
5.00	7.40	0.78
7.50	9,30	0.79

Symle 9.3

[NBS] = 10.00x10 M,	[1933] = 4.00m10 ⁻² M
[veline] = 2.50×10 ⁻² 4.	[152] - 2.00:30-2
[1g(11)] = 4.80×10 6N.	[HS () c) 2] = 3.34×10 ⁻³ H

[macio ₄] n	10 M	Ionic StrongCh	(4) x10m R	
0.90		1.60		1.39
3.00		2.60		1.38
2.00		3.60		1.38
3,00		4.60		1:37
4.00		5.60		1.40
5.00		6.60		1.38
7.50		9,10		1.37

CLOTHE

> Successi die in one of products of the title reaction. Hence it is essential to study its effect on the zace of the cains acids by 185. Hence in order to realise the above aim, a larger number of exposimonte with different concentrations of syncthialds and at conscent concentrations of all other mectants were done the rowels of various experiments obtained in oxidation of glycine, planing and valine have been recorded in tobles 10.1 - 10.5, 10.6 - 10.10 and 10.11 - 10.15 respectively. It is clear from the data of aforeseid tables that increase in concentration of Succiniside in the reaction minture greatly influence the first - order cate constant obtained in exidation of aformed emino action by action of N-beneducationside. Succinimide offert also halps in deciding the meetive species of nebremenciniside in editic andle.

2AUS 10-1

[NB6] = 10.00×10 M. [Glycine] = 2.00×10 M [1.01] = 4.00×10 M. [1.011] = 4.80×10 M [1.01] = 2.00×10 M. [10] (DAC) [10] = 3.34×10 M [10] Succinitates = 1.25×10 M [10] Temporatures

Timo	ma of by		
00	8.12		
05	6.82		
10	6.30		2.52
20	5.26	9,00	
30	4.58		
40	4.26		
60	3.96		
60	3.42		
300	3.04		· · · · · · · · · · · · · · · · · · ·

TABLE 10.2

[HBS] = 10.00x	10	[dycine] = 2.00:	×30 ⁻² M
[MCL] = 4.00x2	0 ⁻² M.	[1m(III)] = 4.80	×10-6
[KG1] = 2.00×1	0 ⁻² M.	[Hg (0/c) 2 = 3.3	4×10 ⁻³ M
succinimide	a 1,43×1	o-3 _{N.} Temperatu	150 30°C

	THE TOTAL SECTION AND THE PROPERTY OF THE PROP	Note [ann]	14 x 20 ⁴	•
(nd.n.)	64/812)	eranggi sijak kalifika dine terinja alifika dininé terjak alifika dinapak alifika kalifika dinapat di teru ters		
00	9.12			
05	7.30			
10	6.64	9.00	2.30	
20	5.96			
30	5.36			
50	4.66			
70	4.20			
100	3,64			
130	3.40	ann i ann an ann an an an an an an an an an a		

2.M.S 10.3

[MAN]	10.00×10		[Glycine]= 2.00x10 4
	4.00×10-2		[I (III)] = 4.80×10-4
[KC1]	2.00×10 ⁻³	M.	[m (0.0) 2] = 3.34×10 ⁻³ M
faccin	inido -	1.67×10	Samporarulta Moc

The state of the s	a standard state dan Francisco e en en esta a servición successario de conservición de en en esta estado estad		(\$ 1×10 ⁷
23.00	ma of bype	[NBS] x10 M	
(min.)	(1/812)	化氯化甲基 医腹部骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨骨	
Managara Anaga ang ang ang ang ang ang ang ang ang	A CONTRACTOR OF THE PROPERTY O		
00	8.12		
05	9,42		
10	6.92		
20	6.28		2.06
30	5.74	9.00	6 9 0 0
50	4.30		
70	4.36		
200	376		
130	3.60	and the state of t	化水子 医牙孔试验 医水油素 化水油 海 化化二苯乙基甲基乙基甲基苯甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基
	and the second s	大小田田· · · · · · · · · · · · · · · · · · ·	

TABLE 10.4

[MBS] = 10.00010 M. [Gaycana] = 3.00010 M [MC1] = 4.00010 M. [X2(X1X)] = 4.80010 M [MC1] = 2.00010 M. [MG (3/MC)] = 3.34010 M

[succinimide] = 2.00x10-3m, Tempurature 30°C

Time (min.)	ml of hype (4/812)	pagagan separatah sara sara sara sara sara sara sara sa	(元) 1×10 ⁷ 11 1 ⁻⁴ 5 ⁻⁴
00	9.12		
05	7.42		
10	6.94		
20	6.20	9.00	1.90
40	5.00		
60	4.30		
60	3,92		
120	3.26		
100	2.82		

FARES - 10 S

[NBS] = 10.00x10 n,	[daycine] = 2.00x30 -2 M
[HC3] = 4.00×10 ⁻² H.	[x*(xx1)] = 4.80×10 ⁻⁶ M
[KCI] = 2.00×10 ⁻² M.	[110 (020) 2] = 3.31130 -311
[Succinimide] = 2.50%	ao ⁻³ m, Tempo katawa 30 ⁰ c

tiao (nin-)	mi of hypo 64/812)	[MES] *10°	(\$\frac{4}{35}\) \(\text{12.0}^7\) \(\text{1.1}^2\) \(\text{1.5}^2\)
· ·	*	·····································	· · · · · · · · · · · · · · · · · · ·
00	8.12		
05	7.94		
10	7.03		
20	6.23		
40	5.52	9.00	1.4
60	4.96		
80	4.52		
120	3.64		
	3.34		

2ABLS 10.6

[NBS] = 10.00x10 M. [Alenine] = 2.00x10 M [MC1] = 10.00x10 M. [I, (III)] = 4.80x10 M [MC1] = 2.00x10 M [MG (0AC)₂] = 3.34x10 M [Succipimide] = 1.43x10 M

entre processor de la constantina del constantina de la constantina de la constantina del constantina de la constantina	MT OF 1920	ENERGY STATES AND THE	(元)2107
(min.)	64/804)	the abstraction to the control of th	
00	6.84		
05	8.06		
1.0	7.62		
30	6.64	9.00	1.96
40	3.36		
70	4.94		
110	3.64		
1,00	3.30		
2:20	2.76		

Table 10.7

[NBC] = 10.00 x 10⁻⁴ M, [NBC] = 2.00 x 10⁻⁴ M

[NC1] = 10.00 x 10⁻⁴ M, [Xg(IXI)] = 4.80 x 10⁻⁴ M

[NC2] = 2.00 x 10⁻² M, [NG(DAC)₂] = 3.34 x 10⁻⁴ M

[Succinimide] = 1.67 x 10⁻³ M, Temperature 30⁻⁶ C

7130	m 1 of hype	[mas]xxo*m	(TE)×107
	41/894) The server on the entire enterprise property and the enterprise property and t	-daggeleike ragen, statis i dipularia; etai sepila nerealen 1960 ostene etait pilakeitakeitakeitakeitakeitakei	H 3 - 3 5 - 4
00	0.94		
05	8,22		
10	7.68		
20	7.06		
9400	2,464		
40	6.04	9.00	1.64
70	4.96		
110	4.08		
160	3.66		
220	3,40		

[NBS] = 10.00x10 M,	[/lenine] = 2.00×10 ⁻² M
[HC] = 10.00×10 ⁻² M.	[xraxx)] = 4.80×10 ⁻⁶ H
$[KC1] = 2.00 \times 10^{-2} \text{ M}.$	[10 (0mc) ₂] = 3.34×10 ⁻³ m
[succinimide] = 2.00x10 -3 M.	Temperature 30°C

84.00	al of hypo	[NBS] ×30 M	1 2 1:20
(13.17 a)	64/384)	e and the second	# 3 - 4 s - 4
00	8.84		e de la company de la comp
05	9.40		
20	8.06		
20	7.00		
40	5.76	2.00	3.34
70	4.80		
130	3.90		
160	3.64		
220	3.52		

PARLE 10.9

	10.00×10 M.	[Alanine] = 2.00×10 ⁻² M
	10.00×10 ⁻² M,	[1 013)] = 4.80×10 M
[FG1] =	2.00×10 ⁻² M.	[HG (DAC) ₂] = 3.34x20 ⁻³ H
Laccini	nide]= 2.50×10 ⁻³ ,	Nampo rescute 30°C

(min.)	ml of hypo (v/894)	Labs 1 x40	
00	eranneren som der stemmer i volumen eran segmen eran eran eran eran eran eran eran er	·····································	i Personan-residentia del descripto de la companya
05	8,66		
10	8.30		
20	9.04	9,00	0.96
40	6.88		
70	5.76		
110	4.50		
160	3.02		
230	3.15		

TARK: 10.10

[NBL] =
$$10.06 \times 10^{-4}$$
 M. [Alanine] = 2.00×10^{-2} M. [I. (LII)] = 4.00×10^{-4} M. [RCL] = 2.00×10^{-2} M. [Eg (D.C.)] = 3.34×10^{-3} M. [Succinitate] = 3.33×10^{-3} M. Temperature 30^{-6} C.

Time	mil of hypo ty/834)		(%)×10 ⁷
00	8.04		
05	8.56		
10	8.38		
20	8.12	9.00	0.75
40	7.16		
70	5.94		
110	4.96		
160	4.06		
220	3.32		

	ad of hypo	[MDS] MOM	(元章)=107
(alc.)	41/336)	inadi ngamana ilinda isa inadinaha. Isani namid-mada naisani, a sa inadingga nagas alaga saga saga naga naga n	M 2 3 6
00	8.56		
05	8.32		
20	8.22		
20	7.70		
40	6.96	9.00	0.94
800	5.76		
340	5.02		
200	4.26		
260	3.44		

2.32.8 10.12

	ma of hypo	[NBS] *xxxx	(一架)x207
(ala.)	64/856)	o tra o s securita (pronoscocio con con con con con con con con con co	M 1-1 5-1
00	9.56		
05	8.38		
30	8.16		
30	7.98	9.00	0.04
40	7.04		
80	5.74		
140	4.56		
200	3.04		
260	3.30		

2/80.16 30 3

[NBS] = 10.00×10⁻¹M, [Veline] = 2.00×10⁻²M [NCI] = 4.00×10⁻²M, [Taix] = 4.80×10⁻¹M [NCI] = 2.00×10⁻²M, [Hg (OAC)] = 3.34×10⁻¹M [Succinimide] = 2.00×10⁻²M, Temperature 30⁻²C

Time	al of hypo	(1482) 1482)	(=) ×10 7
COLOM)	64/356)	kallina lingua saya saya kalan sa a rasa kalan mengada saya kalan kalan kalan kalan kalan kalan kalan kalan ka	H 1-4 5-4
00	0.56		
05	9,30		
10	8.12		
20	7.04		
40	7.12	9.00	0.72
80	5.96		
140	4.50		
300	3.74		
260	3.56		

TABLE 10.14

Time (min.)	al of hypo 84/356)		(%) sad
90	8.56	and the second s	
05	9.36		
20	8.12		
30	7.90		
40	7.30	9.00	0.64
80	6.34		
240	4.92		
200	4.04		
260	3.72		

TABLE 10.15

NBS = 10.00x10 M.	[valine] = 2.00 m 10 - 2 m
(HC3) = 4.00×10 ⁻² M.	$[2_{2}(111)] = 4.80 \times 10^{-6} M$
[ECI] = 2.00×10 ⁻² M.	$[80 (0 \text{Ac})_2] = 3.34 \times 10^{-3} \text{M}$
Succinimide = 3.33.x	10-3M. Temperature 30°C

Time (min.)	al of hype (1/356)	[NBS] x10 %	(-3c)×10 ⁷ × 1-2 s-1
00	8.96	and a second	
05	9.40		
3.0	8.18		
30	7.84	9.00	0.54
40	7.20		
80	6.16		
240	5.02		
200	4.06		
260	3.62		

The results recorded in tables 10.1 - 10.5, 10.6-10.10 and 10.11 - 10.15 in exidation of glycine, elemine and value at various concentrations of speciminaide have been summarised in tables 10.16, 10.17 and 10.18 sespectively.

TABLE 10.16

Mas] = 10.00x10 M,	[Glycine] = $2.00 \times 10^{-2} \text{M}$
[KCl] = 2.00×10 ⁻² M,	$[x_g(xxx)] = 4.80 \times 10^{-6} M$
[HC] = 4.00x10 ⁻² m,	Hg (DAG) 2 = 3.34x10 -3

Temperature 30°C

Succiniaide x 10 3 M	(一能)×307	k ₃ × 30 ⁴
Bolttabarbarbarbaron yan da ottabarbarbarbarbarbarbarbarbarbarbarbarbar		200-1
1,25	2,52	3 *80
2.43	2.30	2.55
1.67	2.06	2.30
2.00	1.90	2.11
2.50	1.96	1.73

TABLE 10-17

	**	10.00×10	M.	[Glycine] = 2.00x10 H
RGL]	139	2.00×10 ⁻³	M,	[x=(xix)]= 4.80x10 ⁻⁶ M
	600	\$.00×10 ⁻²	N.	[tig (DAc) 2] = 3.34x10 ⁻⁸ x

Tempo zaturo 30°C

uorinido] x to ³ n	(元)×10 ⁷ n 1 ⁻¹ 5 ⁻¹	14 × 10 ⁴
1.43	3.94	2.15
1.67	1.64	1.02
2.00	1.34	1.50
2.50	0.96	1.06
3.33	0.75	0.83

[mms] = 9.00:40 % at which (%) was determined

TABLE 10.18

[NEEL] =
$$10.00 \times 10^{-4} \text{M}$$
. [Valine] = $2.00 \times 10^{-4} \text{M}$
[NCL] = 4.0040^{-2}M . [$x_{11}(x_{11})$] = $4.80 \times 10^{-4} \text{M}$
[NCL] = $2.00 \times 10^{-2} \text{M}$. [NU (DAC)] = $3.34 \times 10^{-3} \text{M}$

Tompereture 30°C

Succinimide x 10 M.	("鉴)×10"	k ₂ × 10 ⁴
	N 3 -	
1.43	0.94	1.04
1.67	0.84	0.93
2.00	0.72	0.80
2.50	0.64	0.70
3.33	0.54	0.46

[MBS] = 9.00x30 M at which () was determined

that the second of succession that a second of the value of ky decreases showing negetive effect of succinimide on the tate of meetion.

STAND OF EMBER OF VARIANCE OF TENERAL REPORT OF THE ROLL OF THE PROPERTY OF TH

92 ONTO A STORE OF VARIATION OF THE BRANCH OF THE BASE
92 ONTO A STORE OF A CLESS OF THE BRANCH OF THE BASE
ACTURE MEDIA

end asino acids vis. glycise, alanise and values as end-dant and reductants respectively have been studied in the presence of iridium (IXI) chloride as hemogeneous estables at 30°C in details. These seactions have been studied at 35, 40 and 45°C. The results of such experiments have been recorded in tables II.I - II.J. 11.4 - II.6 and 11.7 - II.9 in addation of glycise, alenine and value respectively. It is clear from the data of results of tables II.I - II.9 that an increasing the target return the reservice rate is significently increased.

MBŞ		10.00×10-4,	Glycine .	2.00m10-2
RG1	**	4.00×10 ⁻² N.	Ir(III) ·	4.80×10 ⁻⁶ M
RG1		1.00×10 ⁻² M.	ity (Ma)	= 3.34x10 ⁻³ H

Temperature 35°C

gimo	ed of hypo	1894S ×30 N	(***)xx0
(alp.)	14/929)	tandat valda ettiini jahan esi. Han säännasta olja väidaksika papavailaksi haivitaipija esiljava	
CO	9,28		a contract and con
05	7.82		
10	6.72		
20	5.24	9.00	4.33
3/0	4.06		
40	3,62		
90	3,24		
60	3,20		
90	3.06		

	***	10.00×10 M,	olycine + 2.00×10-2×
16(2)		4.00×10 ⁻² M,	1 g (3 % X X X) = 4 .80 × 30 -6 M
RC1	500	1.00×10 ⁻² M,	нуяэле) ₂ = 3,34х30 ^{—3} н

Temperature 40°C

the o	ent of thypo	1003 ×30 M	(*)×10"
	na paramenta per disabandhan riin da na ulmangan kanan angan da hanan ulmah day da bangan kanbandi	i diginar nda su uran nda nda mutan da da izilada ngigi pagin sida in adan nda penginisa da salik salik salik	
	9,28		
05	7.48		
3.0	6,30		
20	4.36		
	3.72	9.00	7.30
40	3,28		
50	3.08		
60	2.98		
70	2.06		

TABLE 11.3

225	**	10.00×10	м,	Olycins = 2.00x10 -2
18(2)	1030	4.00m10-2	n,	12 (111) = 4.80x10-6
RC3	0	1.00×10 ⁻³	M.	Hg (0/42) 2 = 3.34x30 -3

Temperature 45°C

Time	all of hypo	9550 940 H	(*)×10 7
(nin-)	64/500)		N 1-2 5-8
00	9,28		and the second s
05	7.28		
10	5.96		
20	3.86		
30	3.26	9.00	13.33
40	2,96		
50)	2.00		
60	2.76		
70	2.66		

2ANLS 11.4

MBS	100	20.00×20-4	Alanina a	2.00x30-2
1163	***	10.00×10 ⁻³ /4,	reary .	4.80×10-6
262	49	1.00m30"2 N.	Hy (Nic) 2 =	3.34×10 ⁻³ M

Temperatura 35°C

22,100	at of hypo	eternitrationerine in the resistance in the consequence in animal of the c	(完)2307
	\$1/840)	gadjardilatin rilak rilak askaratikki ilikundikini kida ginnatija kaliku niku kulpangalak iliki nikik askarati	
60	8.40		
05	7.92		
30	7.60		
20	6.62	9.00	1.45
40	5.04		
60	4.00		
00	3.56		
100	2,96		
\$20	2.24		

928038 91.4

(p)s	23	30.00×30"4x,	when the = 2.00 x 10 ⁻² M
PECL	48	10.00×10 ⁻² n.	Ig (XXX) = 4.80×10 ⁻⁶ H
KG1	400	1.00×10-2 M	Hy \$1Ac) 2 = 3.36x10 -3

Temperature affc

21.00	al of hypo	ESE 230 N	(3)×10
	61/940)	angan mengan salah s	
00	8.40		
65	7.66		
20	7.30		
200	5.86	9,00	2.50
30	4.02		
40	4.36		
30	3.70		
60	3.33		
200	2,92		

SABLE 11.5

	400	10.00×10 ⁻⁴ N.	Almine	100	2.00x10 ⁻² 11
113	400	10.00×10-2	Lg ((%))	400	4.00×10**
EG)	40	1.00×10 ⁻³ M.	18 Torres	2	= 3,34×30 %

Temperature 45°C;

91,00	nd of bypo	MBS MAO M	(TE)=10"
(Man)	01/040)		N 1 Sec
66	8.40		an control and an angular specific property of the control of the
05	7.30		
30	6.42		
15	5.36	9.00	4.40
30	4.79		
25	6.00		
30	3.72		
35	3.32		
45	3.00		

TABLE 11.7

MB 3	130	10.00×10	M.	Valine = 2.00min m
773		4.00210-2	M.	1g(127) = 4.80x10 -6 _N
EG1	800	1.00×10-2	N,	Hy (0/10) 2 = 3.345(10 ⁻³)(

Pemperature 35°C

	nt of typo	RHS 20 H	(一震 1×10 ⁷
	tV1020)		H 3 The Sales
00	10.20		
05	9.50		
20	9.06		
20	0.15		
40	6.38	9.00	1,16
(3)	5.00		
80	4.26		
00	3.94		
20	3.30		

2.00 E

	= 10 -00×10 -4	Veline = 2.00x10 ⁻² M
	= 4.00x10 ⁻² N,	1 (XIX) = 4.80×10 -6
y.G)	≈ 1.00×30°2 H,	Hg (DAE) 2 = 3.36x10 ⁻³ H

Tempenshine 40°C

Time	mi of hype	SOC MAD M	(電)=207
(atn.)	(N/764)	managaring and large constitution and the adversaries of the constitution of the const	
00	10.20		and the second s
05	9.28		
10	8.00		
20	6.56		
30	5.30	9.00	2.91
40	4.90		
90	3.72		
60	3.46		
70	3.38		

2/BLE 11.9

NE		10.00×10	N.	Valine = 2.00x10-2
NCL	800	4,00×30 ⁻²		I α α ΣΕ Α . 60 × 10 - 6 μ
RG3		1.00x10 ⁻²	M,	Hy (DAC) 2 = 3.34M20 -3

Temperature 45°C

Time	at of hype	1135 240	(==)==0
(13.0.)	\$\\\1030\		* * * * * * * * * * * * * * * * * * * *
00	10.20		
05	7.52		
30	6.40		
15	5.36		
20	4.90	9.00	
25	6.06		
30	3.62		
39	3.38		
40	3.20		

The kinetic results of tables 11.1 - 11.3 and 30° C, tables 11.4 - 11.6 and at 30° C and tables 11.7 - 11.9 and at 30° C have been suggestively.

TABLE 11.10

p B.		10.00×30 4,	Clycine = 2.00x10 ⁻² H
	**	4.00×10 ⁻² H,	I (III) = 4.80×10 ⁻⁶ /4
KC1	**	1.00×10-2× ,	147 (0/10) 2 = 3.34×30 ⁻³ H

Tempo natu no	Pc)	k, × 10 ⁴
The state of the s	rie generatiek in genrum voor voor voor verschiegenigenigenigenigenigenigen voor dat voor Verschieden voor dat v	संस्थान के का का कारण का किस्तान का स्थापन के सिकार के का का का किस की का का का का क
30		2,78
35		5.09
40		8.33
45		14.81

Sale dies der				Mary	
NBS a	p 3	D .OU	or. 1		No
18:2	1	0 -00	n	10	N,
KG),	. 1	.0 0	ж	10-2	N.
Alemine	49	2.0	0 3	10"	2 _N ,
I*(III)	Ф	4.0	371.	0-6	A,
Mg (DAG)	9 100	3.3	dac2	0-3	

A STATE OF THE STA	and the state of t	other admiral resignation	te-an-itin alletaperiteitiges en	andriginas yang permilapanggan dilandisti yang salah dilandistir dilandistan d
	Tempe Setu se	19:)	ka x 10 ⁴
Comment	· · · · · · · · · · · · · · · · · · ·	eller-tradic des confet descri	· 9 法公司的法。在中国的特殊中心实际的是国际的政策	e an entre free allement in more une many the time an entrely must be a time to the first the first section by
	30			0.9
	35			1.61
	40			2.79
	45			4.89

T-812 11 12

MAS	403	10.00 × 10-4	M,
	103	6.00 × 10 -2	14.
KC1		1.00 × 10-3	11.
Valip	618	2.00 × 20 ⁻²	17.
x and		4.80×10 -4	11.
Hg (DAC)	識	3.34 m 10 ⁻³	鳞

The state of the state of the state of	化异氯磺胺 网络比特拉特 经自然证券 化二氯甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基	prima nacembri diminita in han main ilingen i con in the connection, 2st. depreter membre a dendric hiteration in the context hiteration, in the context in
	Tempe peture (OG) k ₄ × 10 ⁴
		evec***
William to residence are reques	nder eine Freie , werde in Anders der Geste der Anders der Geste d	经 自然之前一次把一部分 经 使一种的时候,他们就就没有这一个小的人,他们的人都要就没有了那么一个的人,他们的人,我们的人,我们的人们的人,我们就是他们的人们的
	30	1.00
	35	1.04
	40	
	45	5.56

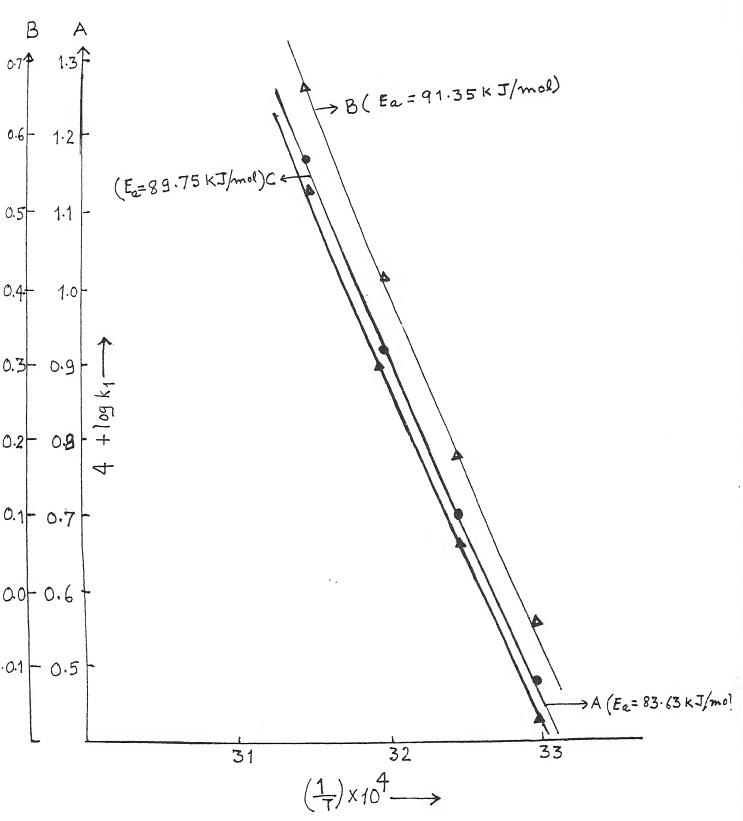


FIG. 11.1: $A \rightarrow In$ UXIDATION OF GLYCINE $B \rightarrow In$ OXIDATION OF ALANINE $C \rightarrow In$ OXIDATION OF VALINE

that on increasing the tem-permune the value of first - order rate constant increases. Now when log k, values were plotted against - . a attraignt line (Fig. 11.1) with slope equal to - %2/2.1018 is obtained. Thus from the slope of the curve it is possible to calculate the value of Ka 1.0. energy of of activation for ordering of entire edge and white by acids orderions of shorter, also ine and value by acids solutions of H-brancauctiniside and 64.63 kJ/mole.

CHAPTER KIN

INTERPETATION OF RESELTS AND BEGUESION

: This Chapter deals with interpretation and discussion of experimentally obtained results and on the basis of such interpretations, an attempt would be made to propose the meaction school for Istill chloride catalysed oxidation of amino acids viz. Glycine, alanime and valing by actuic solutions the benegonatinistide in the presence of servoric acetate as beneits fors scavenger. The reaction mechanisms for any reaction may be proposed on the basis of kinetic observations by many ways but only that mechanism is supposed to be correct which is capable of giving rate equation to conglete agreement with observed kinotic facts. Deferm the meaning Deberg Tor the reactions under investigation here is suggested, it is assential and worthwhile to discuss and moortain the reactive species of various removants involved in the reactions. Hence in onler to ascertain the reactive species of n-broadsuccipitate, reducing agino acids and iridin (III) chiesia is bydachlesic acid media, a careful observations of kinetic features are reguland. Therefore in the next sections kinetic results in summerised form and discussion on the reactive species of aforesaid reactants are described and the mediar final mochanism has been surpested in section 12.5.

Pollowing are key kinetic observations made in the title reactions.

- at its low concentration range while first order shifts to sem order at higher commentation range.
- (11) All the reactions follow first order kinetics with respect to each mains acids used here i.e. with respect to each of plydips, elemins and value.
- (111) First order dependence of the reactions on iridium trichloride was observed.
- (iv) Variation of hydrochloric acid shows decreasing effect
 of hydrogen ions on the rate of oxidation of amino acids.
- (v) Addition of succininios in the reaction mixture of all meetions decreased the rate of oxidation of sains anids.
- (v4) Addition of measuric apetate did not bring about any obsence in the rate of oxidetion of amino acido.
- (vii) Addition of potagolies chiorids was found to have no significant effect on the rate of oxidation of amiso

- (viii) Variation of ionic strength of the medium showed meso offect on the sate of oxidation of main acids.
- (IX) Temposature variation Showed massed effect on the sate of NBS - Mains eside sedos systems.
- (CIX) Corresponding aldehydes have been found to be martice products.

22.2 • ASCRETALISING OF REACTIVE GREGIES OF B-DRONG-

M-benconcentrates (MAS) has been already reported to exist in the following equilibrium.

In amidic media HBS 1.2 may exist as given below a

or

Thus from above equilibria it is clear that in science endia oxidiating openion of NBS may be either NBS or NBS o

reaction shows retarding effect of H\$ on the subse, the refore possibility of said and H_0 a_*
is subset out although negative effect of succiniates (150) is explained on assuming H_0 a_*
as enddising species, then 105 as such is taken as mactive species them succinimide effect should be some contrary to observed its decreasing effect.
This suggests that NSS can not be exidising species as it will fail to explain the kinetic behaviour of meations with respect to somethinds. Hence the only choice is HOS, which can be taken as meative species.

BEACTIVE STECTES OF AMINO ACIDS IN SYCRETHARICS ACIDS

Texten action have been reported to exist as displac londs feet in water. It exists as subjects.

In acidic medie, amino acid might exist as aconding to the following equilibrium

ACH, MILGOO + N ACH, MILGOON ... (8)

Thus in acidic media either dipolar lends form or protonated enimo acid may be reactive producing substance. But if RCH2 NH3 COOR i.e. protonated enimo acid is taken as seartive species, it would sequire first - exder dependence on H° contrary to our observed decreasing effect of H° on rate of reaction. This rules out the possibility of protonated species of enimo acid as seartive species. Hence dipolar sonts form i.e. neutral emimo acid (i.e. RCH2NH3COOR) to reactive species. This when essuad as reactive species gives rate low capable of explaining all observed kinetic data.

12.4 * BEACTIVE SECURE OF LEGICIAN (LT) CREATURE LE IMPROSESSES ACLO

In activic medium inidium (III) chloride*

Further I₂Cl₆ is also in equilibrium with I₂Cl₅ H₂D according to the following equilibrium

Thus there are those possibilities of reactive species in hydrochloric acid for injulum (III) chloride. These ere I.Cl., I.Cl., and I.Cl., I.Cl., and

are cuind out of both of them moules dependence of them on chloride ions contrary to our immignificant effect on the kete of mercion. Hence the only choice left is emercal opecies I.Cl., Wender I.Cl., where I.Cl.,

23.3 • BECHNICH OF I. CLIN CATALYSED OKIDATION OF ACTED ACTED BY 11-BECKDACTORDED IN PROPERTY CRIC

ections that NOR, and neutral amino acid are paidising species and moducing species of N-brompsuccinimide and emino acids respectively in acidic media, Since there is no significant effect of variation of chieride ions on the rate of the maction hence 1,Cl3 as such has been taken as meative species of the catalyst, for the sake of convenience, 1,Cl3 bas been written as I (III) throughout mechanistic derivation.

How considering the above statement and breplog the kinetic results into consideration, the following mechanistic steps are suggested, Here HES, BCH (BH₂) COOR and MSH stand for N-bresserccinimide, mains acid and succinimide pospectively.

+ 12 (111) + HH3+ CO2 + H2

... (111)

where R stands for -H, -CH; -CH (CH;) in glycine, alonipe and value respectively.

The rate of the eforesaid reaction may be expressed in terms of rate of loss of concentration of succinimide i.e. -d uss /dt.

Hence on the basis of above steps rate of the geaction may be written as

of X we got eqn (2) with the help of steps (ii) and (iii)

On substituting the value of X from con (2) in eqn (4) we have eqn (3)

Now the total concentration of $I_{K}Cl_{3}$ i.e. $I_{K}(XIX)$ may be written as eqn (4)

$$x_{\alpha}(x_{11}) = x_{\alpha}(x_{11}) + x$$
 ... (0)

Now by comparing equa (2) and (4) we have

$$\Sigma_{\mathbf{x}}(\Omega \mathbf{x}) = \Sigma_{\mathbf{x}}(\Omega \mathbf{x}) + \sum_{\mathbf{x}} \Sigma_{\mathbf{x}}(\Omega \mathbf{x}) + \sum_{\mathbf{x}} \Omega^{\mathbf{x}} + \sum_{\mathbf{x}} \Delta \mathbf{x}$$

On comparing equs (3) and (6) we have

since he i.e. velocity constant for the element step is small beads he as $(k_{-2} H^4 + k_2 HDB_2$

Thus considering the above inequality orn (7) becomes eqn (8)

Commidering step (1) we have

or mos - E Had mas / Hen

*** (9)

On substituting the value of HOP_g from eqn (9) in eqn (8) we have eqn (10)

whose k = ha ka Ka

It is evident from the case law (10) that

3) Order with respect to NDS at its low condentration is one when k_2 H 2 NSH k_2 k_3 HBS and equation (10) becomes e.g. (11)

Again at higher concentration of NBS the I order tends to sero - order i.e. when $k_2 \times k_3$ HESS $k_2 \times k_4$ (H⁺) ESH and eqn (MO) becomes eqn (MO)

The rate eqn 400) clearly shows first order in both I_{2} (111) and enths acts i.e. AA. It also explains decreasing effect of H^{*} i.e. HG_{2} and HG_{3}

no involved in the seadtion except its this as acavenger for

for bomide tone. It also explains memo effect of chloride tone i.e. KCl addition.

basis of mechanistic steps (1 - 111)) which involve interaction between a dation and a meutral molecule in the slow and rate determining step. Such interaction requires sens effect of ionic strength of the medium which has been experimentally also observed, wence rate for (10) also explains negligible effect of ionic strength of the medium of the medium on the case of oxidation of the makes acids. Monce the proposed mechanism seams to be valid.

DEFERENCES

- 1. R. Singh, J.H. Siwazi and S. P. Hosbron, Intl. J. Chem. Kinetics, 10, 995 (1978).
- J.P. Shamas, R.M.P. Siryh, A.K. Jingh and B. Singh.
 Tetrahedron, 42, 2739 (1986).
- 3. M.S. Reschandren, D. Resvensonorthy, V. Reje Singh and T.S. Vivekonandem, Mull. Chem. Sec. Jpn. 63, 2997 (1990).
- 4. G. Gopalkrichnen, D.R.Rei and H. Venkatesubremenian. Indian J. Chem., 190, 293 (1980).